

## SEQUENCE LISTING

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SWORDS, KATHY

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<140> 10/607,538

<141> 2003-06-27

<150> 10/369,324

<151> 2003-02-20

<150> 60/357,661

<151> 2002-02-20

<150> 60/377,602

<151> 2002-05-06

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<170> PatentIn Ver. 3.2

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&lt;213&gt; Artificial Sequence

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ttccgaatag catcggtaac atgagcaaaG tctgcgcct tacaacggct ctcccgctga 9240

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cgccgtcccg gactgatggg ctgcctgtat cgagtgggtga ttttgtgccg agctgccggg 9300  
cggggagctg ttggctggct gga 9323

<210> 5  
<211> 546  
<212> DNA  
<213> Solanum tuberosum

<400> 5  
atgagaaatt tattcccat attgatgcta atcaccaatt tggcactcaa caacgataac 60  
aacaacaaca acaacaaca caataattat aatctcatal acgcaacgtg tagggagacc 120  
ccatattact ccctatgtct caccacccta caatccggtc cacgtagtaa cgagggttag 180  
gggtggtagt ccatcaccac cctaggcctc atcatgggtg acgcggtgaa atcaaagtc 240  
atagaaataa tggaaaaaat aaaagagcta gagaaatcga accctgagtg gcgggcccc 300  
cttagccagt gttacgtggc gtataatgcc gtccctacgag ccgatgtaac ggtagccgtt 360  
gaagccttaa agaaggggtg ccccaaatgt gctgaagatg gtatggatga tgttgttgc 420  
gaagcacaata cttgtgagta tagttttaat tattataata aattggattt tccaatttct 480  
aatttgagta gggaaataat tgaactatca aaagttgcta aatccataat tagaatgta 540  
ttatga 546

<210> 6  
<211> 658  
<212> DNA  
<213> Solanum tuberosum

<400> 6  
gaaccatgca tctcaatctt aataactaaa aatgcaacaa aattctagtg gagggaccag 60  
taccagtaca ttagatatta tcttttatta ctataataat attttaatta acacgagaca 120  
taggaatgtc aagtggtagc ggtaggaggg agttggttca gttttttaga tactaggaga 180  
cagaaccgga gggggccatt gcaaggccca agttgaagtc cagccgtgaa tcaacaaaga 240  
gaggggccat aatactgtcg atgagcattt ccctataata cagtgtccac agttgccttc 300  
cgctaaggga tagccaccgc ctattctctt gacacgtgtc actgaaacct gctacaaata 360  
aggcaggcac ctctcattc tcacactcac tcaactcacac agctcaacaa gtggtaactt 420  
ttactcatct cctccaatta tttctgattt catgcatgtt tccctacatt ctattatgaa 480  
tcgtgttatg gtgtataaac gttgtttcat atctcatctc atctattctg attttgattc 540  
tcttgctac tgaatttgac cctactgtaa tcggtgataa atgtgaatgc ttcctcttct 600  
tcttcttct ctcagaaatc aatttctgtt ttgttttgt tcatctgtag cttggtag 658

<210> 7  
<211> 355  
<212> DNA  
<213> Solanum tuberosum

<400> 7  
ttttaatgtt tagcaaatgt cctatcagtt ttctcttttt gtcgaacggt aatttagagt 60  
tttttttgc ataggtattt tcgtttttga tgtatgtgac aacctcggg attgttgatt 120  
tatttcaaaa ctaagagttt ttgcttattg ttctcgtcta ttttggatat caatcttagt 180  
tttatactct ttctagttct ctacgtgtta aatgttcaac aacttagcaa tttggctgca 240  
gcgtatggat tatggaacta tcaagtctgt gggatcgata aatatgcttc tcaggaattt 300  
gagattttac agtctttatg ctcatgggt tgaagtataat atagtaaaaa aatag 355

<210> 8  
<211> 179

<212> DNA

<213> Solanum tuberosum

<400> 8

accttatttc actaccactt tccactctcc aatccccata ctctctgctc caatcttcat 60  
tttgcttcgt gaattcatct tcacgaatt tctcgacgct tcttcgctaa tttcctcggt 120  
acttcactaa aaatcgacgt ttctagctga acttgagtga attaagccag tgggaggat 179

<210> 9

<211> 569

<212> DNA

<213> Solanum tuberosum

<400> 9

gttagaaatc ttctctatct ttgggtttttg tctggtttaga ttctcgaatt agctaatacag 60  
gtgctgttat agcccttaat tttgagtttt ttttcgggtg ttttgatgga aaaggcctaa 120  
aatttgagtt tttttacgtt gggttgatgg aaaaggccta caattggagt tttccccgtt 180  
gttttgatga aaaagccctt agtttgagat tttttttctg tctgattcgat tctaaagggt 240  
taaaattaga gtttttacat ttgtttgatg aaaaaggcct taaatttgag tttttccggt 300  
tgatttgatg aaaaagcctt agaatttggt ttttttcgtc gggttgattc tgaaggccta 360  
aaatttgagt ttctccggtt gttttgatga aaaagccta aatttgagtt tctccggctg 420  
ttttgatgaa aaagccctaa atttgagttt tttcccgctg ttttagattg tttggtttta 480  
attctcgaat cagctaatac gggagtgtga aaagccctaa aatttgagtt tttttcgttg 540  
ttctgattgt tgtttttatg aatttgag 569

<210> 10

<211> 1738

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Expression cassette for a sense and antisense copy of the leader associated with the R1 gene

<400> 10

ggtaccgaac catgcatctc aatcttaata ctaaaaaatg caacaaaatt ctagtggagg 60  
gaccagtacc agtacattag atattatctt ttattactat aataatattt taattaacac 120  
gagacatagg aatgtcaagt ggtagcggta ggaggagggt gggtcagttt tttagatact 180  
aggagacaga accggagggg cccattgcaa ggcccaagtt gaagtccagc cgtgaatcaa 240  
caaagagagg gcccataata ctgtcgatga gcatttcctt ataatacagt gtccacagtt 300  
gccttccgct aagggatagc caccgcctat tctcttgaca cgtgtcactg aaacctgcta 360  
caaataaggc aggcacctcc tcattctcac actcactcac tcacacagct caagaaggat 420  
ccaccttatt tcaactaccac ttccactctt ccaatcccca tactctctgc tccaatcttc 480  
attttgcttc gtgaattcat ctctcatcga tttctcgaag ctctctcgtt aatttcctcg 540  
ttacttcaat agaaatcgac gtttctagct gaacttgagt gaattaagcc agtgggagga 600  
tgaattcaag gttagaaatc ttctctatct ttgggttttg tctgttttaga ttctcgaatt 660  
agctaatacag gtgctgttat agcccttaat tttgagtttt ttttcgggtg ttttgatgga 720  
aaaggcctaa aatttgagtt tttttacgtt gggttgatgg aaaaggccta caattggagt 780  
tttccccgtt gttttgatga aaaagccctt agtttgagat tttttttctg tctgattcgat 840  
tctaaagggt taaaattaga gtttttacat ttgtttgatg aaaaaggcct taaatttgag 900  
tttttccggt tgatttgatg aaaaagccct agaatttggt ttttttcgtc gggttgattc 960  
tgaaggccta aaatttgagt ttctccggtt gttttgatga aaaagccta aatttgagtt 1020  
tctccggtg ttttgatgaa aaagccctaa atttgagttt tttccccgtg ttttagattg 1080  
tttggtttta attctcgaat cagctaatac gggagtgtga aaagccctaa aatttgagtt 1140

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tttttcggtg ttctgattgt tgtttttatg aatttgcaga tggatatcat cctcccactg 1200
gcttaattca ctcaagttca gctagaaacg tctgatttcta gtgaagtaac gaggaaatta 1260
gcgaagaagc gtcgagaaat tcatgaaga tgaattcacg aagcaaaatg aagattggag 1320
cagagagtat ggggattgga gaggaggaaag tggtagtgaa ataaggtaag cttttgattt 1380
taatgttttag caaatgtcct atcagttttc tctttttgtc gaacggtaat ttagagtttt 1440
ttttgctata tggatttttcg tttttgatgt atgtgacaac cctcgggatt gttgatttat 1500
ttcaaaacta agagtttttg cttattgttc tctgtctattt tggatatcaa tcttagtttt 1560
atatcttttc tagttctcta cgtgttaaat gtccaacaca ctagcaattt ggctgcagcg 1620
tatggattat ggaactatca agtctgtggg atcgataaat atgcttctca ggaatttgag 1680
attttacagt ctttatgctc attgggttga gtataatata gtaaaaaaat agtctaga 1738

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&lt;210&gt; 11

&lt;211&gt; 237

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

<223> Description of Artificial Sequence: Synthetic  
spacer sequence

&lt;400&gt; 11

```

gtaactttta ctcactctcct ccaattatct ctgatttcat gcatgtttcc ctacattcta 60
ttatgaatcg tggtatggtg tataaacggt gtttcataac tcatctcatc tattctgatt 120
ttgattctct tgcctactga atttgaccct actgtaatcg gtgataaatg tgaatgcttc 180
ctcttcttct tcttcttctc agaaatcaat ttctgttttg tttttgttca tctgtag 237

```

&lt;210&gt; 12

&lt;211&gt; 1406

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

<223> Description of Artificial Sequence: Alternative  
expression cassette for a sense and antisense  
copy of the leader associated with the R1 gene

&lt;400&gt; 12

```

ggtaccgaac catgcatctc aatcttaata ctaaaaaatg caacaaaatt ctagtggagg 60
gaccagtacc agtaçattag atattatctt ttattactat aataatattt taattaacac 120
gagacatagg aatgtcaagt ggtagcggta ggagggagtt gggtcagttt tttagatact 180
aggagacaga accggagggg cccattgcaa ggcccaagtt gaagtccagc cgtgaatcaa 240
caaagagagg gccataata ctgtcgatga gcatttccct ataatacagt gtccacagtt 300
gccttccgct aagggatagc caccgcgtat tctcttgaca cgtgtcactg aaacctgcta 360
.caaataaggc aggcacctcc tcattctcac actcactcac tcacacagct caagaaggat 420
ccaccttatt tçactaccac tttccactct ccaatcccca tactctctgc tccaatcttc 480
atthttgcttc gtgaattcat cttcatcgaa tttctcgacg cttcttcgct aatttccctc 540
ttacttcact agaaatcgac gttcttagct gaacttgagt gaattaagcc agtgggagga 600
tgaattcgtg gtaactttta ctcatctcct ccaattatct ctgatttcat gcatgtttcc 660
ctacattcta ttatgaatcg tggtatggtg tataaacggt gtttcataac tcatctcatc 720
tattctgatt ttgattctct tgcctactga atttgaccct actgtaatcg gtgataaatg 780
tgaatgcttc ctcttcttct tcttcttctc agaaatcaat ttctgttttg tttttgttca 840
tctgtagctt gatatcatcc tccactggc ttaattcact caagttcagc tagaaacgct 900
gatttctagt gaagtaacga ggaattagc gaagaagcgt cgagaaaattc gatgaagatg 960
aattcacgaa gcaaaatgaa gattggagca gagagtatgg ggattggaga gtggaaagtg 1020
gtagtgaat aaggtaagct tttgatttta atgttttagca aatgtcctat cagttttctc 1080

```



```

tttttgtcga acggttaattt agagtttttt ttgctatatg gatttttcgtt tttgatgtat 1140
gtgacaaccc tcgggattgt tgatttattt caaaactaag agtttttgct tattgttctc 1200
gtctattttg gatatacaatc ttagttttat atcttttcta gttctctacg tgttaaagt 1260
tcaacacact agcaatttgg ctgcagcgta tggattatgg aactatcaag tctgtgggat 1320
cgataaatat gcttctcagg aatttgagat tttacagtct ttatgctcat tgggttgagt 1380
ataatatagt aaaaaaatag tctaga 1406

```

&lt;210&gt; 13

&lt;211&gt; 686

&lt;212&gt; DNA

&lt;213&gt; Solanum tuberosum

&lt;400&gt; 13

```

gaaccatgca tctcaatctt aatactaaaa aatgcaacaa aattctagtg gagggaccag 60
taccagtaca ttagatatta tcttttatta ctataataat attttaatta acacgagaca 120
taggaatgtc aagtggtagc ggtaggaggg agttgggtca gttttttaga tactaggaga 180
cagaaccgga gggggccatt gcaaggccca agttgaagtc cagccgtgaa tcaacaaaga 240
gagggcccat aatactgtcg atgagcattt cctataata cagtgtccac agttgccttc 300
cgctaaggga tagccaccgc ctattctctt gacacgtgtc actgaaacct gctacaaata 360
aggcaggcac ctctcattc tcacactcac tcaactcac agctcaacaa gtggtaactt 420
ttactcatct cctccaatta tttctgattt catgcatgtt tccctacatt ctattatgaa 480
tcgtgttatg gtgtataaac gttgtttcat atctcatctc atctattctg attttgattc 540
tcttgccctac tgaatttgac cctactgtaa tcgggtgataa atgtgaatgc ttcctcttct 600
tcttcttctt ctcaaaaatc aatttctgtt ttgtttttgt tcatctgtag cttggtagat 660
tccccctttt gtgaccaca catcac 686

```

&lt;210&gt; 14

&lt;211&gt; 2046

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

<223> Description of Artificial Sequence: Alternative  
expression cassette for a sense and antisense copy  
of the leader associated with the R1 gene

&lt;400&gt; 14

```

ggtaccgaac catgcatctc aatcttaata ctaaaaaatg caacaaaatt ctagtggagg 60
gaccagtacc agtacattag atattatctt ttattactat aataatattt taattaacac 120
gagacatagg aatgtcaagt ggtagecgga ggaggaggtt ggttcagttt tttagatact 180
aggagacaga accggagggg cccattgcaa ggcccaagtt gaagtcagc cgtgaatcaa 240
caaagagagg gcccataata ctgtcgatga gcatttccct ataatacagt gtccacagtt 300
gccttccgct aagggatagc caccgcctat tctcttgaca cgtgtcactg aaacctgcta 360
caaataaggc aggcacctcc tcattctcac actcactcac tcacacagct caagaaggat 420
cctcatattc tagttgtatg ttgttcagag aagaccacag atgtgatcat attctcattg 480
tatcagatct gtgaccactt acctgatacc tcccatgaag ttacctgtat gattatacgt 540
gatccaaagc catcacatca tgttcacctt cagctatttg aggagaagtg agaagtagga 600
attgcaatat gaggaataat aagaaaaact ttgtaaaagc taaattagct gggtagata 660
tagggagaaa tgtgtaaaca ttgtactata tatagtatat acacacgcat tatgtattgc 720
attatgcact gaataatacc gcagcatcaa agaaggaatt caagggttaga aatcttctct 780
atttttgggt tttgtctgtt tagattctcg aattagctaa tcagggtgctg ttatagccct 840
taattttgag ttttttttcg gttgttttga tggaaaaggc ctaaaatttg agttttttta 900
cgttggtttg atggaaaagg cctacaattg gagttttccc cgttgttttg atgaaaaggc 960
ccctagtttg agattttttt tctgtcgatt cgattctaaa gggtttaaatt tagagttttt 1020
acatttggtt gatgaaaaag gccttaaatt tgagtttttc cggttgattt gatgaaaaag 1080

```

```

ccctagaatt tgtgtttttt cgtcggtttg attctgaagg cctaaaattt gagttttctcc 1140
ggctgttttt atgaaaaagc cctaaatttg agttttctcc gctgttttga tgaaaaagcc 1200
ctaaatttga gttttttccc cgtgttttag attgttttgt ttttaattctc gaatcagcta 1260
atcagggagt gtgaaaagcc ctaaaatttg agtttttttc gttgtttctga ttgttgtttt 1320
tatgaatttg cagatggata tccttctttg atgctgcggt attattcagt gcataatgca 1380
atacataatg cgtgtgtata tactatatat agtacaatgt ttacacattt ctccctatat 1440
catacccgagc taatttagct tttacaaagt ttttcttatt attcctcata ttgcaattcc 1500
tacttctcac ttctcctcca atagctgaag gtgaacatga tgtgatggct ttggatcacg 1560
tataatcata caggtaactt catgggaggt atcaggtaag tggtcacaga tctgatacaa 1620
tgagaatatg atcacatctg tggctcttctc tgaacaacat acaactagaa tatgaaagct 1680
tttgattttt atgttttagca aatgtcctat cagttttctc tttttgtcga acggtaattt 1740
agagtttttt ttgctatatg gattttcggt tttgatgtat gtgacaaccc tcgggattgt 1800
tgattttattt caaaactaag agtttttgct tattgttctc gtctattttg gatatacaatc 1860
ttagttttat atcttttcta gttctctacg tgttaaagt tcaacacact agcaatttgg 1920
ctgcagcgta tggattatgg aactatcaag tctgtgggat cgataaatat gcttctcagg 1980
aatttgagat tttacagtct ttatgctcat tgggttgagt ataatatagt aaaaaaatag 2040
tctaga                                     2046

```

<210> 15

<211> 1714

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Alternative expression cassette for a sense and antisense copy of the leader associated with the R1 gene

<400> 15

```

ggtaccgaac catgcatctc aatcttaata ctaaaaaatg caacaaaatt ctagtggagg 60
gaccagtacc agtacattag atattatctt ttattactat aataatattt taattaacac 120
gagacatagg aatgtcaagt ggtagcggta ggaggaggtt gggtcagttt tttagatact 180
aggagacaga accggagggg cccattgcaa ggcccaagtt gaagtccagc cgtgaatcaa 240
caaagagagg gcccataata ctgtcgatga gcatttccct ataatacagt gtccacagtt 300
gccttccgct aagggatagc caccgcctat tctcttgaca cgtgtcactg aaacctgcta 360
caaataaggc aggcacctcc tcattctcac actcactcac tcacacagct caagaaggat 420
cctcatattc tagttgtatg ttgttcagag aagaccacag atgtgatcat attctcattg 480
tatcagatct gtgaccactt acctgatacc tcccatgaag ttacctgtat gattatacgt 540
gatccaaagc catcacatca tgttcacctt cagctatttg aggagaagtg agaagtagga 600
attgcaatat gaggaataat aagaaaaact ttgtaaaagc taaattagct ggggatgata 660
tagggagaaa tgtgtaaaca ttgtactata tatagtatat acacacgcat tatgtattgc 720
attatgcact gaataatacc gcagcatcaa agaaggaatt cgtggtaact tttactcatc 780
tcctccaatt atttctgatt tcatgcatgt ttccctacat tctattatga atcgtgttat 840
ggtgtataaa cgttgtttca tatctcatct catctattct gattttgatt ctcttgccca 900
ctgaatttga ccctactgta atcggtgata aatgtgaatg cttcctcttc ttcttcttct 960
tctcagaaat caatttctgt tttgtttttg ttcatctgta gcttgatata cttctttgat 1020
gctgcggtat tattcagtgc ataatgcaat acataatgag tgtgtatata ctatatatag 1080
tacaatgttt acacatttct cctatatca taccagcta atttagcttt tacaagttt 1140
ttcttattat tcctcatatt gcaattccta cttctcaott ctctcccaat agctgaagg 1200
gaacatgatg tgatggcttt ggatcacgta taatcataca ggtaacttca tgggaggtat 1260
caggtaagtg gtcacagatc tgatacaatg agaatatgat cacatctgtg gtcttctctg 1320
aacaacatac aactagaata tgaaagcttt tgattttaat gtttagcaaa tgtcctatca 1380
gttttctctt tttgtcgaac ggtaatttag agttttttt gctatatgga ttttcgtttt 1440
tgatgtatgt gacaaccctc gggattgttg atttatttca aaactaagag tttttgctta 1500
ttgttctcgt ctattttgga tatcaatctt agttttatat cttttctagt tctctacgtg 1560
ttaaatgttc aacacactag caatttggct gcagcgtatg gattatggaa ctatcaagtc 1620

```

tgtgggacg ataaatatgc ttctcaggaa tttgagattt tacagtcttt atgctcattg 1680  
ggttgagtat aatatagtaa aaaaatagtc taga 1714

<210> 16

<211> 333

<212> DNA

<213> Solanum tuberosum

<400> 16

tcataattcta gttgtatgtt gttcagagaa gaccacagat gtgatcatat tctcatttga 60  
tcagatctgt gaccacttac ctgatacctc ccatgaagt acctgtatga ttatacgtga 120  
tccaaagcca tcacatcatg ttacacctca gctattggag gagaagtgg aagtaggaat 180  
tgcaatatga ggaataataa gaaaaacttt gtaaaagcta aattagctgg gtatgatata 240  
gggagaaatg tgtaaacatt gtactatata tagtatatac acacgcatta tgtattgcat 300  
tatgcactga ataataccgc agcatcaaag aag 333

<210> 17

<211> 2046

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Alternative  
expression cassette for a sense and antisense copy  
of the trailer associated with the R1 gene

<400> 17

ggtaccgaac catgcatctc aatcttaata ctaaaaaatg caacaaaatt ctagtggagg 60  
gaccagtacc agtacattag atattatctt ttattactat aataatattt taattaacac 120  
gagacatagg aatgtcaagt ggtagcggta ggaggagggt gggtcagttt tttagatact 180  
aggagacaga accggagggg cccattgcaa ggcccaagtt gaagtccagc cgtgaatcaa 240  
caaagagagg gcccataata ctgtcgatga gcatttccct ataatacagt gtccacagtt 300  
gccttccgct aagggatagc caccgcgtat tctcttgaca cgtgtcactg aaacctgcta 360  
caaataaggc aggcacctcc tcattctcac actcactcac tcacacagct caagaaggat 420  
cctcatattc tagttgtatg ttgttcagag aagaccacag atgtgatcat attctcattg 480  
tatcagatct gtgaccactt acctgatacc tccatgaag ttacctgtat gattatacgt 540  
gatccaaaagc catcacatca tgttcacctt cagctattgg aggagaagtg agaagtagga 600  
attgcaatat gaggaataat aagaaaaact ttgtaaaagc taaattagct gggatatgata 660  
tagggagaaa tgtgtaaaca ttgtactata tatagtatat acacacgcat tatgtattgc 720  
attatgcact gaataatacc gcagcatcaa agaaggaatt caaggttaga aatcttctct 780  
atTTTTggtt tttgtctgtt tagattctcg aattagctaa tcagggtgctg ttatagccct 840  
taaTTTTgag tttttttctg gttgttttga tggaaaaggc ctaaaatttg agtTTTTtta 900  
cgttggtttg atggaaaagg cctacaattg gagttttccc cgttggtttg atgaaaagc 960  
ccctagtttg agattttttt tctgtcgatt cgattctaaa ggtttaaaat tagagttttt 1020  
acatttggtt gatgaaaaag gccttaaatt tgagtttttc cgttggtttt gatgaaaaag 1080  
ccctagaatt tgtgtttttt cgtcgggttg attctgaagg cctaaaattt gagtttctcc 1140  
ggctgttttg atgaaaagc cctaaatttg agtttctccg gctgttttga tgaaaagcc 1200  
ctaaatttga gttttttccc cgtgttttag attgtttggt ttttaattctc gaatcagcta 1260  
atcaggagggt gtgaaaagcc ctaaaatttg agtttttttc gttgttttga ttgttgtttt 1320  
tatgaatttg cagatggata tcttctttg atgctgcggg attattcagt gcataatgca 1380  
atacataatg cgtgtgtata tactatatat agtacaatgt ttacacattt ctccctatat 1440  
catacccgagc taatttagct ttacaaaagt ttttcttatt attcctcata ttgcaattcc 1500  
tacttctcac ttctctcca atagctgaag gtgaacatga tgtgatggct ttggatcacg 1560  
tataatcata caggtaaact catgggaggt atcaggtaag tggtcacaga tctgatataa 1620  
tgagaatatg atcacatctg tggcttcttc tgaacaacat acaactagaa tatgaaagct 1680

```

tttgatttta atgttttagca aatgtcctat cagttttctc tttttgtcga acggttaattt 1740
agagtttttt ttgctatatg gattttcgtt tttgatgtat gtgacaaccc tggggattgt 1800
tgattttatt caaaactaag agtttttgct tattgttctc gtctattttg gatatcaatc 1860
ttagttttat atcttttcta gttctctacg tgtaaagtgt tcaacacact agcaatttgg 1920
ctgcagcgta tggattatgg aactatcaag tctgtgggat cgataaatat gcttctcagg 1980
aatttgagat ttacagtct ttatgctcat tgggttgagt ataatatagt aaaaaaatag 2040
tctaga 2046

```

&lt;210&gt; 18

&lt;211&gt; 1714

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

<223> Description of Artificial Sequence: Alternative  
expression cassette for a sense and antisense copy  
of the trailer associated with the R1 gene

&lt;400&gt; 18

```

ggtaccgaac catgcatctc aatcttaata ctaaaaaatg caacaaaatt ctagtggagg 60
gaccagtacc agtacattag atattatctt ttattactat aataatattt taattaacac 120
gagacatagg aatgtcaagt ggtagcggta ggaggagggt gggtcagttt tttagatact 180
aggagacaga accggagggg cccattgcaa ggcccaagtt gaagtcagc cgtgaatcaa 240
caaagagagg gcccataata ctgtcgatga gcatttccct ataatacagt gtccacagtt 300
gccttccgct aagggatagc caccgcgtat tctcttgaca cgtgtcactg aaacctgcta 360
caaataaggc aggcacctcc tcattctcac actcactcac tcacacagct caagaaggat 420
cctcatattc tagttgtatg ttgttcagag aagaccacag atgtgatcat attctcattg 480
tatcagatct gtgaccactt acctgatacc tcccatgaag ttacctgtat gattatacgt 540
gatccaaagc catcacatca tgttcacctt cagctatttg aggagaagtg agaagttaga 600
attgcaatat gaggaataat aagaaaaact ttgtaaaagc taaattagct ggggatgata 660
tagggagaaa tgtgtaaaca ttgtactata tatagtatat acacacgcat tatgtattgc 720
attatgcact gaataatacc gcagcatcaa agaagggaatt cgtggtaact tttactcatc 780
tcctccaatt atttctgatt tcatgcatgt ttccctacat tctattatga atcgtgttat 840
gggtgtataaa cgttgtttca tatctcatct catctattct gattttgatt ctcttgcta 900
ctgaatttga ccctactgta atcggtgata aatgtgaatg ctctctcttc ttctctctct 960
tctcagaaat caatttctgt tttgtttttg ttcatctgta gcttgatata ctctcttgat 1020
gctgcgggat tattcagtgc ataattgcaat acataatgcg tgtgtatata ctatatatag 1080
tacaatgttt acacatttct cctatatca taccagcta atttagcttt taaaaagttt 1140
ttcttattat tcctcatatt gcaattccta cttctcactt ctctccaat agctgaagg 1200
gaacatgatg tgatggcttt ggatcacgta taatcataca ggtaacttca tgggagggtat 1260
caggtaagtg gtcacagatc tgatacaatg agaatatgat cacatctgtg gtcttctctg 1320
aacaacatac aactagaata tgaaagcttt tgattttaat gtttagcaaa tgtcctatca 1380
gttttctctt tttgtcgaac ggtaatttag agtttttttt gctatatgga ttttcgtttt 1440
tgatgtatgt gacaaccctc gggattgttg atttatttca aaactaagag tttttgctta 1500
ttgttctcgt ctatttttga tatcaatctt agttttatat cttttctagt tctctacgtg 1560
ttaaatgttc aacacactag caatttggct gcagcgatg gattatggaa ctatcaagtc 1620
tgtgggatcg ataaatatgc ttctcaggaa tttgagattt tacagtcttt atgctcattg 1680
ggttgagtat aatatagtaa aaaaatagtc taga 1714

```

&lt;210&gt; 19

&lt;211&gt; 2322

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

<223> Description of Artificial Sequence: Alternative  
expression cassette for a sense and antisense copy  
of the trailer associated with the R1 gene

&lt;400&gt; 19

```

ggtaccgaac catgcatctc aatcttaata ctaaaaaatg caacaaaatt ctagtggagg 60
gaccagtacc agtacattag atattatctt ttattactat aataatattt taattaacac 120
gagacatagg aatgtcaagt ggtagcggta ggagggagtt gggtcagttt tttagatact 180
aggagacaga accggagggg cccattgcaa ggcccaagt gaagtccagc cgtgaatcaa 240
caaaagagagg gcccataata ctgtcgatga gcatttccct ataatacagt gtccacagtt 300
gccttccgct aagggatagc caccgcctat tctcttgaca cgtgtcactg aaacctgcta 360
caaataaggc aggcacctcc tcattctcac actcactcac tcacacagct caacaagtgg 420
taacttttac tcatctctc caattatttc tgatttcatg catgtttccc tacattctat 480
tatgaatcgt gttatgggtg ataaacgttg ttccatatct catctcatct attctgattt 540
tgattctctt gcctactgaa tttgacccta ctgtaatcgg tgataaatgt gaatgcttcc 600
tcttcttctt cttcttctca gaaatcaatt tctgttttgt ttttgttcat ctgtagcttg 660
gtagattccc cttttttag accacacatc acggatcctc atattctagt tgtagttgt 720
tcagagaaga ccacagatgt gatcatattc tcattgtatc agatctgtga ccacttacct 780
gatacctccc atgaagttag ctgtatgatt atacgtgac caaagccatc acatcatggt 840
caccttcagc tattggagga gaagtgaaga gtaggaattg caatatgagg aataataaga 900
aaaactttgt aaaagctaaa ttagctgggt atgatatagg gagaaatgtg taacattgt 960
actatatata gtatatacac acgcattatg tattgcatta tgcactgaat aataccgcag 1020
catcaaagaa ggaattcaag gttagaatc ttctctattt ttgggttttg tctgtttaga 1080
ttctcgaatt agctaatacag gtgctgttat agcccttaat tttgagtttt ttttcgggtg 1140
ttttgatgga aaaggccta aatttgagtt tttttacgtt gggttgatgg aaaaggccta 1200
caattggagt tttcccgtt gttttgatga aaaagccct agtttgagat ttttttctg 1260
tcgattcgat tctaaagggt taaaattaga gtttttcat ttgtttgatg aaaaaggcct 1320
taaatttgag tttttccggt tgatttgatg aaaaagccct agaattttgt tttttctg 1380
gggttgattc tgaaggccta aaatttgagt ttctccggtt gttttgatga aaaagcccta 1440
aatttgagtt tctccggtg ttttgatgaa aaagcccta atttgagtt tttcccgtg 1500
tttttagattg tttggtttta attctcgaat cagctaatac gggagtgtga aaagcccta 1560
aatttgagtt ttttctgtg ttctgattgt tgtttttatg aatttgaga tggatatcct 1620
tctttgatgc tgcggtatta ttcagtgc ataatgacac ataagcgtg tgatatatact 1680
atatatagta caatgtttac acatttctcc ctatatcata cccagctaatt ttagctttta 1740
caaagttttt cttattattc ctcatattgc aattcctact tctcacttct cctccaatag 1800
ctgaagggtg acatgatgtg atggcttttg atcacgtata atcatacagg taacttcatg 1860
ggaggtatca ggttaagtgt cacagatctg atacaatgag aatatgatca catctgtggt 1920
cttctctgaa caacatacaa ctagaatatg aaagcttttg attttaatgt ttagcaaatg 1980
tcctatcagt tttctctttt tgcgaacgg taatttagag ttttttttgc tatatggatt 2040
ttcgtttttg atgtatgtga caaccctcg gattgttgat ttatttcaaa actaagagtt 2100
tttgcttatt gttctcgtct attttggata tcaatcttag ttttatatct tttctagttc 2160
tctacgtgtt aaatgttcaa cacactagca atttggtgc agcgtatgga ttatggaact 2220
atcaagtctg tgggatcgat aaatatgctt ctcaggaatt tgagatttta cagtctttat 2280
gctcattggg ttgagtataa tatagtaaaa aaatagctga ga 2322

```

&lt;210&gt; 20

&lt;211&gt; 1714

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

<223> Description of Artificial Sequence: Alternative  
expression cassette for a sense and antisense copy  
of the trailer associated with the R1 gene

&lt;400&gt; 20

```

ggtaccgaac catgcatctc aatcttaata ctaaaaaatg caacaaaatt ctagtggagg 60
gaccagtacc agtacattag atattatctt ttattactat aataatattt taattaacac 120
gagacatagg aatgtcaagt ggtagcggta ggaggaggtt ggttcagttt tttagatact 180
aggagacaga accggagggg ccattgcaa ggcccaagtt gaagtccagc cgtgaatcaa 240
caaagagagg gcccataata ctgtcgatga gcatttcctt ataatacagt gtccacagtt 300
gccttccgct aagggatagc caccgctat tctcttgaca cgtgtcactg aaacctgcta 360
caaataaggc aggcacctcc tcattctcac actcactcac tcacacagct caagaaggat 420
cctcatattc tagttgtatg ttgttcagag aagaccacag atgtgatcat attctcattg 480
tatcagatct gtgaccactt acctgatacc tcccatgaag ttacctgtat gattatacgt 540
gatccaaagc catcacatca tgttcacctt cagctattgg aggagaagtg agaagtagga 600
attgcaatat gaggaataat aagaaaaact ttgtaaaagc taaattagct gggtagata 660
tagggagaaa tgtgtaaaca ttgtactata tatagtatat acacacgcat tatgtattgc 720
attatgcact gaataatacc gcagcatcaa agaaggaaat cgtggtaact tttactcatc 780
tcctccaatt atttctgatt tcatgcatgt ttccctacat tctattatga atcgtgttat 840
gggtgtataaa cgttgtttca tatctcatct catctattct gattttgatt ctcttgcta 900
ctgaatttga cctactgta atcggtgata aatgtgaatg ctctctcttc ttcttcttct 960
tctcagaaat caatttctgt ttgttttttg ttcatctgta gcttgatata cttctttgat 1020
gctgcggtat tattcagtgc ataatgcaat acataatgag tgtgtatata ctatatatag 1080
tacaatgttt acacatttct ccctatatca taccagcta atttagcttt tacaagttt 1140
ttcttattat tcctcatatt gcaattccta ctctcactt ctctccaat agctgaagg 1200
gaacatgatg tgatggcttt ggatcacgta taatcataca ggtaacttca tgggaggtat 1260
caggtaagtg gtcacagatc tgatacaatg agaatatgat cacatctgtg gtcttctctg 1320
aacaacatac aactagaata tgaaagcttt tgattttaat gtttagcaaa tgtcctatca 1380
gttttctctt tttgtcgaac ggtaatttag agtttttttt gctatatgga ttttcgtttt 1440
tgatgtatgt gacaaccctc gggattgttg atttatttca aaactaagag tttttgctta 1500
ttgttctcgt ctattttgga tatcaatctt agttttatat cttttctagt tctctacgtg 1560
ttaaatgttc aacacactag caatttggtc gcagcgtatg gattatggaa ctatcaagtc 1620
tgtgggatcg ataaatatgc ttctcaggaa tttagagatt tacagtcctt atgctcattg 1680
ggttgagtat aatatagtaa aaaaatagtc taga 1714

```

&lt;210&gt; 21

&lt;211&gt; 273

&lt;212&gt; DNA

&lt;213&gt; Solanum tuberosum

&lt;400&gt; 21

```

ttagagtgtg ggtaagtaat taagttaggg atttgtggga aatggacaaa tataagagag 60
tgcaggggag tagtgcagga gatthttcgtg cttttattga taaataaaaa aagggtgaca 120
tttaatttcc acaagaggac gcaacacaac acacttaatt cctgtgtgtg aatcaataat 180
tgacttctcc aatcttcac c aataaaataa ttcacaatcc tcactctctt atcactctca 240
ttcgaagaagc tagatttgca tagagagcac aaa 273

```

&lt;210&gt; 22

&lt;211&gt; 158

&lt;212&gt; DNA

&lt;213&gt; Solanum tuberosum

&lt;400&gt; 22

```

gagggggaag tgaatgaaaa ataacaaagg cacagtaagt agtttctctt tttatcatgt 60
gatgaaggta tataatgtat gtgtaagagg atgatgttat taccacataa taagagatga 120
agagtctcat tttctgctta aaaaaacaat tcactggc 158

```

<210> 23  
 <211> 1917  
 <212> DNA  
 <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Expression cassette for a sense and antisense copy of the leader associated with the L glucan phosphorylase gene

<400> 23

```

ggtagcgaac catgcatctc aatcttaata ctaaaaaatg caacaaaatt ctagtggagg 60
gaccagtacc agtacattag atattatctt ttattactat aataatattt taattaacac 120
gagacatagg aatgtcaagt ggtagcggta ggagggagtt gggtcagttt tttagatact 180
aggagacaga adcgaggagg cccattgcaa ggcccaagtt gaagtccagc cgtgaatcaa 240
caaagagagg gcccataata ctgtcgatga gcatttcctt ataatacagt gtccacagtt 300
gccttccgct aagggatagc caccgcgtat tctcttgaca cgtgtcactg aaacctgcta 360
caaataaggc aggcacctcc tcattctcac actcactcac tcacacagct caagaaggat 420
ccgagtgtgg gtaagtaatt aagttaggga tttgtgggaa atggacaaat ataagagagt 480
gcaggggagt agtgcaggag attttcgtgc ttttattgat aaataaaaaa aggggtgacat 540
ttaatttcca caagaggacg caacacaaca cacttaattc ctgtgtgtga atcaataatt 600
gacttctcca atcttcatca ataaaaaat tcacaatcct cactctctta tcactctcat 660
tcgaaaagct agatttgcac agagagcaca gaattcaagg ttagaaatct tctctatatt 720
tggtttttgt ctgttttagat tctcgaatta gctaatacagg tgctgttata gcccttaatt 780
ttgagttttt tttcggttgt tttgatggaa aaggcctaaa atttgagttt ttttacgttg 840
gtttgatgga aaaggcctac aattggagtt ttcccggttg ttttgatgaa aaagcccta 900
gtttgagatt tttttctgtg cgattcgatt ctaaaggttt aaaattagag tttttacatt 960
tgtttgatga aaaaggcctt aaatttgagt tttcccggtt gatttgatga aaaagccta 1020
gaatttgtgt tttttcgtcg gtttgattct gaaggcctaa aatttgagtt tctccggctg 1080
ttttgatgaa aaagccctaa atttgagttt ctccggctgt tttgatgaaa aagccctaaa 1140
tttgagtttt ttcccggtgt tttagattgt ttggttttaa ttctcgaatc agctaatacag 1200
ggagtgtgaa aagccctaaa atttgagttt ttttcgttgt tctgatttgt gtttttatga 1260
atttgcagat ggatatctgt gctctctatg caaatctagc ttttcgaatg agagtataaa 1320
gagagtggag atttgaattt attttattga tgaagattgg agaagtcaat tattgattca 1380
cacacaggaa ttaagtgtgt tgtgttgcgt cctcttgttg aaattaaatg tcaccctttt 1440
tttatttatc aataaaaagca cgaaaatctc ctgcactact ccctgcact ctcttatatt 1500
tgtccatttc ccacaaatcc ctaacttaat tacttaacca cactctaagc ttttgatttt 1560
aatgttttagc aaatgtccta tcagttttct ctttttgtcg aacggtaatt tagagttttt 1620
tttgctatat ggattttcgt ttttgatgta tgtgacaacc ctcggttggt ttgatttatt 1680
tcaaaaactaa gagtttttgc ttattgttct cgtctatttt ggatatcaat cttagtttta 1740
tatcttttct agttctctac gtgttaaatg ttcaacacac tagcaatttg gctgcagcgt 1800
atggattatg gaactatcaa gtctgtggga tcgataaata tgcttctcag gaatttgaga 1860
ttttacagtc tttatgctca ttgggttgag tataatatag taaaaaata gtctaga 1917

```

<210> 24  
 <211> 1585  
 <212> DNA  
 <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Alternative expression cassette for a sense and antisense copy of the leader associated with the L glucan phosphorylase gene

<400> 24

```

ggtagcgaac catgcatctc aatcttaata ctaaaaaatg caacaaaatt ctagtggagg 60

```

```

gaccagtacc agtacattag atattatcct ttattactat aataatattt taattaacac 120
gagacatagg aatgtcaagt ggtagcggta ggagggagtt gggttcagttt tttagatact 180
aggagacaga accggagggg cccattgcaa ggcccaagtt gaagtccagc cgtgaatcaa 240
caaagagagg gcccataata ctgtcgatga gcatttcctt ataatacagt gtccacagtt 300
gccttcgctt aagggatagc caccgctat tctcttgaca cgtgtcactg aaacctgcta 360
caaataaggc aggcacctcc tcattctcac actcactcac tcacacagct caagaaggat 420
ccgagtgtgg gtaagtaatt aagttaggga tttgtgggaa atggacaaat ataagagagt 480
gcaggggagt agtgcaggag attttcgtgc ttttattgat aaataaaaaa aggggtgacat 540
ttaatttcca caaggaggag caacacaaca cacttaattc ctgtgtgtga atcaataatt 600
gacttctcca atcttcatca ataaaataat tcacaatcct cactctctta tcactctcat 660
tcgaaaagct agatttgcag agagagcaca gaattcgtgg taacttttac tcatctctc 720
caattatttc tgatttcatg catgtttccc tacattctat tatgaatcgt gttatgggtg 780
ataaacgttg tttcatatct catctcatct attctgattt tgattctctt gcctactgaa 840
tttgacccta ctgtaatcgg tgataaatgt gaatgcttcc tcttcttctt cttcttctca 900
gaaatcaatt tctgttttgt tttgtttcat ctgtagcttg atatctgtgc tctctatgca 960
aatctagctt ttcgaatgag agtgataaga gagtgaggat tgtgaattat tttattgatg 1020
aagattggag aagtcaatta ttgattcaca cacaggaatt aagtgtgttg tgttgctgct 1080
tcttgtggaa attaaatgtc accctttttt tatttatcaa taaaagcagc aaaatctcct 1140
gcactactcc cctgactctt cttatatttg tccatttccc acaaatccct aacttaatta 1200
cttaccacca ctctaagctt ttgattttta tgtttagcaa atgtccatc agttttctct 1260
ttttgtcgaa cggtaattta gagttttttt tgcataatgg attttcgttt ttgatgtatg 1320
tgacaaccct cgggatttgt gatttatttc aaaactaaga gtttttgctt attgttctcg 1380
tctatttttg atatcaatct tagttttata tcttttctag ttctctacgt gttaaatgtt 1440
caacacacta gcaatttggc tgcagcgtat ggattatgga actatcaagt ctgtgggatac 1500
gataaatatg cttctcagga atttgagatt ttacagtctt tatgctcatt ggggtgagta 1560
taatatagta aaaaaatagt ctaga 1585

```

&lt;210&gt; 25

&lt;211&gt; 2193

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

<223> Description of Artificial Sequence: Alternative expression cassette for a sense and antisense copy of the leader associated with the L glucan phosphorylase gene

&lt;400&gt; 25

```

ggtaccgaac catgcatctc aatcttaata ctaaaaaatg caacaaaatt ctagtggagg 60
gaccagtacc agtacattag atattatcct ttattactat aataatattt taattaacac 120
gagacatagg aatgtcaagt ggtagcggta ggagggagtt gggttcagttt tttagatact 180
aggagacaga accggagggg cccattgcaa ggcccaagtt gaagtccagc cgtgaatcaa 240
caaagagagg gcccataata ctgtcgatga gcatttcctt ataatacagt gtccacagtt 300
gccttcgctt aagggatagc caccgctat tctcttgaca cgtgtcactg aaacctgcta 360
caaataaggc aggcacctcc tcattctcac actcactcac tcacacagct caacaagtgg 420
taacttttac tcactctctc caattatttc tgatttcatg catgtttccc tacattctat 480
tatgaatcgt gttatgggtg ataaacgttg tttcatatct catctcatct attctgattt 540
tgattctctt gcctactgaa tttgacccta ctgtaatcgg tgataaatgt gaatgcttcc 600
tcttctctct cttcttctca gaaatcaatt tctgttttgt tttgtttcat ctgtagcttg 660
gtagattccc cttttttagt accacacatc acggatccga gtgtgggtaa gtaattaaat 720
tagggatttg tgggaaatgg acaaatataa gagagtgcag gggagtatg caggagattt 780
tcgtgctttt attgataaat aaaaaaaggg tgacatttaa ttccacaag aggacgcaac 840
acaacacact taattcctgt gtgtgaatca ataattgact tctccaatct tcataataa 900
aataattcac aatcctcact ctcttatcac tctcattcga aaagctagat ttgcatagag 960
agcacaagaat tcaagggttg aaatctctc ttttttttgt ttttgcctgt ttagattctc 1020
gaattagcta atcagggtgct gttatagccc ttaattttga gtttttttgc ggttggtttg 1080

```



```

atggaaaagg cctaaaattt gagttttttt acgttggttt gatggaaaag gcctacaatt 1140
ggagttttcc ccgttggttt gatgaaaaag ccctagtttt gagatttttt ttctgtcgat 1200
tcgattctaa aggttttaaa ttagagtttt tacatttggt tgatgaaaaa ggcttaaat 1260
ttgagttttt ccggttgatt tgatgaaaaa gccctagaat ttgtgttttt tcgtcggttt 1320
gattctgaag gcctaaaatt tgagtttttc cggctgtttt gatgaaaaag ccctaaaatt 1380
gagtttctcc ggctgttttg atgaaaaagc cctaaatttg agttttttcc ccgtgtttta 1440
gattgttttg ttttaattct cgaatcagct aatcagggag tgtgaaaagc cctaaaattt 1500
gagttttttt cgttggtctg attgttggtt ttatgaattt gcagatggat atctgtgctc 1560
tctatgcaaa tctagctttt cgaatgagag tgataagaga gtgaggattg tgaattattt 1620
tattgatgaa gattggagaa gtcaattatt gattcacaca caggaattaa gtgtgttggtg 1680
ttgcgtcttc ttgtggaaat taaatgtcac ccttttttta tttatcaata aaagcacgaa 1740
aatctctctc actactccc tgactctct tatatttctc catttccac aaatccctaa 1800
cttaattact taccacact ctaagctttt gatttttaag tttagcaaat gtctatcag 1860
ttttctcttt ttgtcgaaag gtaatttaga gttttttttg ctatatggat tttcgttttt 1920
gatgtatgtg acaaccctcg ggattgttga tttatttcaa aactaagagt ttttgcttat 1980
tgttctctgc tattttggat atcaatctta gttttatata ttttctagtt ctctacgtgt 2040
taaatgttca acacactagc aatttggttg cagcgtatgg attatggaac tatcaagtct 2100
gtgggatcga taaatatgct tctcaggaat ttgagatttt acagtcttta tgctcattgg 2160
gttgagtata atatagtaaa aaaatagtct aga 2193

```

<210> 26

<211> 1861

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Alternative expression cassette for a sense and antisense copy of the leader associated with the L glucan phosphorylase gene

<400> 26

```

ggtagcgaac catgcatctc aatcttaata ctaaaaaatg caacaaaatt ctagtggagg 60
gaccagtacc agtacattag atattatctt ttattactat aataatattt taattaacac 120
gagacatagg aatgtcaagt ggtagcggta ggaggagggt gggtcagttt tttagatact 180
aggagacaga accggagggg ccatttgcaa ggcccaagtt gaagtccagc cgtgaatcaa 240
caaagagagg gcccataata ctgtcgatga gcatttccct ataatacagt gtccacagtt 300
gccttccgct aagggatagc caccgctat tctcttgaca cgtgtcactg aaacctgcta 360
caaataaggc aggcacctcc tcattctcac actcactcac tcacacagct caacaagtgg 420
taacttttac tcatctcttc caattatttc tgatttcatg catgtttccc tacattctat 480
tatgaatcgt gttatggtgt ataaacgttg tttcatatct catctcatct attctgattt 540
tgattctctt gcctactgaa tttgacctta ctgtaatcgg tgataaatgt gaatgcttcc 600
tcttctctct ctcttctca gaaatcaatt tctgttttgt ttttgttcat ctgtagcttg 660
gtagattccc ctttttgtag accacacatc acggatccga gtgtgggtaa gtaattaaagt 720
tagggatttg tgggaaatgg acaaatataa gagagtgcag gggagtagtg caggagattt 780
tcgtgctttt attgataaat aaaaaagggt tgacatttaa tttccacaag aggacgcaac 840
acaacacact taattcctgt gtgtgaatca ataattgact tctccaatct tcatcaataa 900
aataattcac aatcctcact ctcttatcac tctcattcga aaagctagat ttgcatagag 960
agcacagaat tcgtggtaac ttttactcat ctctccaat tatttctgat ttcatgcatg 1020
tttccctaca ttctattatg aatcgtgtta tgggtgtataa acgttgtttc atatctcatc 1080
tcatctatct tgattttgat tctcttgctt actgaatttg accctactgt aatcgggtgat 1140
aaatgtgaat gcttctctct ctctctcttc ttctcagaaa tcaatttctg tttgtttttt 1200
gttcatctgt agcttgatat ctgtgctctc tatgcaaatc tagcttttctg aatgagagtg 1260
ataagagagt gaggattgtg aattatttta ttgatgaaga ttggagaagt caattattga 1320
ttcacacaca ggaattaaagt gtgttggtgt gcgtctctct gtggaaatta aatgtcacc 1380
tttttttatt tatcaataaa agcacgaaaa tctcctgcac tactccctg cactctctta 1440
tatttgtcca tttccacaa atccctaact taattactta cccacactct aagcttttga 1500

```

```

ttttaatggt tagcaaatgt cctatcagtt ttctcttttt gtcgaacggg aatttagagt 1560
tttttttgct atatggattt tcgtttttga tgtatgtgac aacctcggg attgttgatt 1620
tatttcaaaa ctaagagttt ttgcttattg ttctcgtcta ttttgatat caatcttagt 1680
tttatatctt ttctagttct ctacgtgtta aatgttcaac aactagcaa tttggctgca 1740
gcgtaggat tatggaacta tcaagtctgt gggatcgata aatatgcttc tcaggaattt 1800
gagattttac agtctttatg ctcatgggt tgagtataat atagtaaaaa aatagtctag 1860
a

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&lt;210&gt; 27

&lt;211&gt; 1788

&lt;212&gt; DNA

&lt;213&gt; Solanum tuberosum

&lt;400&gt; 27

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atggcaagct tgtgcaatag tagtagtaca tctctcaaaa ctctttttac ttcttctctc 60
acttctttat cttccactcc taagccctct caacttttca tccatggaaa acgtaaccaa 120
atgttcaaaag ttctatgcaa ggttatcaat aataacggtg accaaaacgt tgaaacgaat 180
tctgttgatc gaagaaatgt tcttcttggc ttaggtgggc tttatgggtg tgctaagtct 240
ataccattag ctgcattccg ctgctccaact ccacctctg atctctcgtc ttgtagtata 300
gccaggatta acgaaaatca ggtggtgccc tacagttgtt gcgcgcctaa gcctgatgat 360
atggagaaaag ttccgtatta caagtccct tctatgacta agctccgtgt ccgtcagcct 420
gctcatgaag ctaatgagga gtatattgcc aagtacaatc tggcgattag tcgaatgaga 480
gatcttgata agacacaacc tttaaaccct attggtttta agcaacaagc taatatacat 540
tgtgcttatt gtaatggtgc ttatagaatt ggtggcaaa agttacaagt tcataattct 600
tggtctttct tcccgttcca tagatggtag ttgtacttcc acgagagaat cgtgggaaaa 660
ttcattgatg atccaacttt cgctttgcca tattggaatt gggaccatcc aaagggtatg 720
cgcttctctg ccatgtatga tctgaagggt acttccctt tctatgtaac acgtgaccaa 780
agtcaccgaa atggagcagt aatcgatctt ggttttttgc gcaatgaagt cgaàacaact 840
caactccagt tgatgagcaa taatttaaca ctaatgtacc gtcaaatggt aactaatgct 900
ccatgtctct ggatgttctt tgggtgggct tatgatctcg ggaatcaac tgaactccc 960
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tcaactttgc ccaatggtgc aatatcaaac ggtgagaata tgggtcattt ttactagct 1080
gctttggacc cggttttctt ttgccatcac agcaatgtgg atcggtatg gagcgaatgg 1140
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tttttctatg atgaaaatga aaacccttac cgtgtgaaag tccgagactg tttggacacg 1260
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aacagagggg acataagggt cgtatgtgtc ctgaacgtgg acaataatgt gaatgcgaat 1560
gagcttgaca aggcggaggt tgcggggagt tatactagtt tgccacatgt tcatagagct 1620
ggtgagacta atcatatcgc gactgttgat ttccagctgg cgataacgga actgttggag 1680
gatattggtt tggaagatga agatactatt gcggtgactc tggtgccaaa gagaggtggt 1740
gaaggatatc ccattgaaaag tgcgacgac agtcttgacg attgttaa 1788

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&lt;210&gt; 28

&lt;211&gt; 1788

&lt;212&gt; DNA

&lt;213&gt; Solanum tuberosum

&lt;400&gt; 28

```

atggcaagct tgtgcaatag tagtagtaca tctctcaaaa ctctttttac ttcttctctc 60
acttctttat cttccactcc taagccctct caacttttca tccatggaaa acgtaaccaa 120
atgttcaaaag ttctatgcaa ggttatcaat aataacggtg accaaaacgt tgaaacgaat 180
tctgttgatc gaagaaatgt tcttcttggc ttaggtgggc tttatgggtg tgctaagtct 240

```

```

ataccattag ctgcatccgc tgctccaact ccacctcctg atctctcgtc ttgtagtata 300
gccaggatta acgaaaaatca ggtggtgccg tacagttggt gcgcgcctaa gcctgatgat 360
atggagaaag ttccgtatta caagttccct tctatgacta agctccgtgt ccgtcagcct 420
gctcatgaag ctaatgagga gtatattgcc aagtacaatc tggcgattag tcgaatgaga 480
gatcttgata agacacaacc tttaaacctt attggtttta agcaacaagc taatatacag 540
tgggcttatg gtaatggtgc ttatagaatt ggtggcaaag agttacaagt tcataattct 600
tggtttttct tcccgttcca tagatggtac ttgtacttcc acgagagaat cgtgggaaaa 660
ttcattgatg atccaacttt cgctttgcc aatttggaatt gggaccatcc aaagggtatg 720
cgttttcctg ccattgtatga tcgtgaaggg acttcccttt tcgatgtaac acgtgaccaa 780
agtcaccgaa atggagcagt aatcgatctt ggttttttcg gcaatgaagt cgaaacaact 840
caactccagt tgatgagcaa taatttaaca ctaatgtacc gtcaaatggt aactaatgct 900
ccatgtcctc ggatgttctt tgggtggcct tatgatctcg ggattaacac tgaactcccg 960
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gctttggacc cggttttctt ttgccatcac agcaatgtgg atcggatgtg gagcgaatgg 1140
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tttttctatg atgaaaatga aaaccttac cgtgtgaaag tccgagactg tttggacacg 1260
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acaaaaacta cagctgggaa agtgaatata gcttctcttc cgccagctag caatgtattc 1380
ccagtggcta aactcgacaa agcaatttctg ttttccatca ataggccgac ttcgtcaagg 1440
actcaacaag agaaaaatgc acaagaggag atggtgacat tcagtagcat aagatatgat 1500
aacagagggt acataagggt cgatgtgttc ctgaacgtgg acaataatgt gaatgcgaat 1560
gagcttgaca aggcggaggt tgcggggagt tatactagtt tgccacatgt tcatagagct 1620
ggtgagacta atcatatcgc gactgttgat ttccagctgg cgataacgga actgttggag 1680
gatattggtt tggaagatga agatactatt gcggtgactc tggtgccaaa gagaggtggt 1740
gaaggatatc ccattgaaag tgcgacgac agtcttgacg attgttaa 1788

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&lt;210&gt; 29

&lt;211&gt; 154

&lt;212&gt; DNA

&lt;213&gt; Solanum tuberosum

&lt;400&gt; 29

```

ttagtctcta ttgaatctgc tgagattaca ctttgatgga tgatgctctg tttttgtttt 60
cttggtctgt ttttctctct gttgaaatca gcttgtgtgc ttgatttcat tgaagtgtgt 120
attcaagaat aatcagttta caattatggt tggg 154

```

&lt;210&gt; 30

&lt;211&gt; 1691

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

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<223> Description of Artificial Sequence: Expression
cassette for a sense and antisense copy of the trailer
associated with a PPO gene

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&lt;400&gt; 30

```

ggtaccgaac catgcatctc aatcttaata ctaaaaaatg caacaaaatt ctagtggagg 60
gaccagtacc agtacattag atattatctt ttattactat aataatattt taattaacac 120
gagacatagg aatgtcaagt ggtagcggta ggaggagggt ggttcagttt tttagatact 180
aggagacaga accggagggg ccattgcaa ggccaagt gaagtccagc cgtgaatcaa 240
caaagagagg gcccataata ctgtcgatga gcatttccct ataatacagt gtccacagtt 300
gccttccgct aagggatagc caccgctat tctcttgaca cgtgtcactg aaacctgcta 360
caaataaggc aggcacctcc tcattctcac actcactcac tcacacagct caagaaggat 420

```

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ccttagtctc tattgaatct gctgagatta cactttgatg gatgatgctc tgtttttggt 480
ttcttggtct gttttttcct ctgttgaaat cagctttggt gcttgatttc attgaagttg 540
ttattcaaga ataaatcagt tacaattatg gaattcaagg ttagaaatct tctctatttt 600
tggtttttgt ctgttttagat tctcgaatta gctaatacagg tgctgttata gcccttaatt 660
ttgagttttt tttcgggtgt tttgatggaa aaggcctaaa atttgagttt ttttacgttg 720
gtttgatgga aaaggcctac aattggagtt tttcccggtg ttttgatgaa aaagcccta 780
gtttgagatt tttttctgt cgattcgatt ctaaagggtt aaaattagag tttttacatt 840
tgtttgatga aaaaggcctt aaatttgagt tttcccggtt gatttgatga aaaagcccta 900
gaatttggtt ttttcgtcg gtttgattct gaaggcctaa aatttgagtt tctccggctg 960
ttttgatgaa aaagccctaa atttgagttt ctccggctgt tttgatgaaa aagccctaaa 1020
tttgagtttt tttcccggtg ttttagattg ttggttttaa ttctcgaatc agctaatacag 1080
ggagtggtgaa aagccctaaa atttgagttt ttttcgttgt tctgattggt gtttttatga 1140
atttgcagat ggatatcctt ctttgatgct gatccataat tgtaactgat ttattcttga 1200
ataacaactt caatgaaatc aagcaacaaa gctgatttca acagaggaaa aaacagaaca 1260
agaaaacaaa aacagagcat catccatcaa agtghtaatc cagcagattc aatagagact 1320
aagcttttga ttttaagtgt tagcaaatgt cctatcagtt ttctcttttt gtcgaacggg 1380
aatttagagt tttttttgct atatggattt tcgtttttga tgtatgtgac aacctcggg 1440
attgttgatt tatttcaaaa ctaagagttt ttgcttattg ttctcgtcta ttttggatat 1500
caatcttagt tttatatctt ttctagttct ctacgtgtta aatgttcaac acactagcaa 1560
tttggctgca gcgtatggat tatggaacta tcaagtctgt gggatcgata aatatgcttc 1620
tcaggaattt gagattttac agtctttatg ctcattgggt tgagtataat atagtaaaaa 1680
aatagcttag a                                     1691

```

&lt;210&gt; 31

&lt;211&gt; 1359

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Expression

cassette for a sense and antisense copy of the trailer  
associated with a PPO gene

&lt;400&gt; 31

```

gggtaccgaac catgcatctc aatcttaata ctaaaaaatg caacaaaatt ctagtggagg 60
gaccagtacc agtacattag atattatctt ttattactat aataatattt taattaacac 120
gagacatagg aatgtcaagt ggtagcggta ggagggagtt gggtcagttt tttagatact 180
aggagacaga accggagggg. ccatttgcaa ggcccaagtt gaagtccagc cgtgaatcaa 240
caaagagagg gcccataata ctgtcgatga gcatttccct ataatacagt gtccacagtt 300
gccttccgct aagggatagc caccgcgtat tctcttgaca cgtgtcactg aaacctgcta 360
caaataaggc aggcacctcc tcattctcac actcactcac tcacacagct caagaaggat 420
ccttagtctc tattgaatct gctgagatta cactttgatg gatgatgctc tgtttttggt 480
ttcttggtct gttttttcct ctgttgaaat cagctttggt gcttgatttc attgaagttg 540
ttattcaaga ataaatcagt tacaattatg gaattcgttg taacttttac tcatctcttc 600
caattatttc tgatttcatt catgtttccc tacattctat tatgaatcgt gttatgggtg 660
ataaacggtt ttcatatct catctcatct attctgattt tgattctctt gcctactgaa 720
tttgacccta ctgtaatcgg tgataaatgt gaatgcttcc tcttcttctt cttcttctca 780
gaaatcaatt tctgttttgt ttttgttcat ctgtagcttg atatccttct ttgatgctga 840
tcataaattg taactgattt attcttgaat aacaacttca atgaaatcaa gcaacaaagc 900
tgatttcaac agaggaaaaa acagaacaaag aaaaacaaaa cagagcatca tccatcaaaag 960
tgtaatctca gcagattcaa tagagactaa gcttttgatt ttaatgttta gcaaatgtcc 1020
tatcagtttt ctctttttgt cgaacggtaa ttttagagttt tttttgctat atggattttc 1080
gtttttgatg tatgtgacaa cctcgggat tgttgattta tttcaaaact aagagttttt 1140
gcttatttgt ctcgctatatt ttggatatca atcttagttt tatatctttt ctagtctctt 1200
acgtgttaaa tgttcaacac actagcaatt tggctgcagc gtatggatta tggaaactatc 1260
aagtcgtggt gatcgataaa tatgcttctc aggaatttga gattttacag tctttatgct 1320

```

cattggggttg agtataatat agtaaaaaaa tagtctaga

1359

<210> 32

<211> 1967

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Expression cassette for a sense and antisense copy of the trailer associated with a PPO gene

<400> 32

ggtaccgaac catgcatctc aatcttaata ctaaaaaatg caacaaaatt ctagtggagg 60  
gaccagtacc agtacattag atattatctt ttattactat aataatattt taattaacac 120  
gagacatagg aatgtcaagt ggtagcggta ggaggagatt gggttcagttt tttagatact 180  
aggagacaga accggagggg ccattgcaa ggcccaagtt gaagtcacgc cgtgaatcaa 240  
caaagagagg gcccataata ctgtcgatga gcatttccct ataatacagt gtccacagtt 300  
gccttccgct aagggatagc caccgcctat tctcttgaca cgtgtcactg aaacctgcta 360  
caaataaggc aggcacctcc tcattctcac actcactcac tcacacagct caacaagtgg 420  
taacttttac tcatctcctc caattatttc tgatttcatg catgtttccc tacattctat 480  
tatgaatcgt gttatggtgt ataaacgttg tttcatatct catctcatct attctgattt 540  
tgattctctt gcctactgaa tttgacctta ctgtaatcgg tgataaatgt gaatgcttcc 600  
tcttcttctt cttcttctca gaaatcaatt tctgttttgt ttttgttcat ctgtagcttg 660  
gtagattccc cttttttag accacacatc acggatcctt agtctctatt gaatctgctg 720  
agattacact ttgatggatg atgctctggt tttgttttct tgttctggtt ttctctctgt 780  
tgaaatcagc tttgttgctt gatttcattg aagttgttat tcaagaataa atcagttaca 840  
attatggaat tcaaggtag aaatctctc tatttttggg ttttgtctgt ttagattctc 900  
gaattagcta atcaggtgct gttatagccc ttaattttga gtttttttcc ggtgtgtttg 960  
atggaaaagg cctaaaattt gagttttttt acgttggttt gatggaaaag gcctacaatt 1020  
ggagttttcc cgttggtttt gatgaaaag cccctagttt gagatttttt ttctgtcgat 1080  
tcgattctaa aggttttaaa tttagagttt tacatttggt tgatgaaaaa ggccttaaat 1140  
ttgagttttt ccggttgatt tgatgaaaaa gccctagaat ttgtgttttt tcgtcggttt 1200  
gattctgaag gcctaaaatt tgagtttctc cggtgttttt gatgaaaag ccctaaattt 1260  
gagtttctcc ggctgttttg atgaaaaagc cctaaatttg agttttttcc ccgtgtttta 1320  
gattgttttg ttttaattct cgaatcagct aatcaggagg tgtgaaaagc cctaaaattt 1380  
gagttttttt cgttggtctg attgtgtttt ttatgaattt gcagatggat atccttcttt 1440  
gatgctgac cataattgta actgatttat tcttgaataa caacttcaat gaaatcaagc 1500  
aacaagctg atttcaacag agggaaaaac agaacaagaa aacaaaaaca gagcatcatc 1560  
catcaaagt taatctcagc agattcaata gagactaagc ttttgatttt aatgttttagc 1620  
aaatgtccta tcagttttct ctttttgctg aacggtaatt tagagttttt tttgctatat 1680  
ggattttcgt ttttgatgta tgtgacaacc ctggggattg ttgatttatt tcaaaactaa 1740  
gagtttttgc ttattgttct cgtctatttt ggatatcaat cttagtttta tatcttttct 1800  
agttctctac gtgttaaatg ttcaacacac tagcaatttg gctgcagcgt atggattatg 1860  
gaactatcaa gtctgtggga tcgataaata tgcttctcag gaatttgaga ttttacagtc 1920  
tttatgctca ttgggttgag tataatatag taaaaaata gtctaga 1967

<210> 33

<211> 1635

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Expression cassette for a sense and antisense copy of the trailer

associated with a PPO gene

<400> 33

```

ggtaccgaac catgcatctc aatcttaata ctaaaaaatg caacaaaatt ctagtggagg 60
gaccagtacc agtacattag atattatctt ttattactat aataatattt taattaacac 120
gagacatagg aatgtcaagt ggtagcggta ggaggagggt gggtcagttt tttagatact 180
aggagacaga accggagggg cccattgcaa ggcccaagtt gaagtccagc cgtgaatcaa 240
caaagagagg gcccataata ctgtcgatga gcatttccct ataatacagt gtccacagtt 300
gccttccgct aagggatagc caccgcgtat tctcttgaca cgtgtcactg aaacctgcta 360
caaataaggc aggcacctcc tcattctcac actcactcac tcacacagct caacaagtgg 420
taactttttac tcatctcctc caattatttc tgatttcatg catgtttccc tacattctat 480
tatgaatcgt gttatgggtg ataaacgttg ttccatatct catctcatct attctgattt 540
tgattctctt gcctactgaa ttgacccta ctgtaatcgg tgataaatgt gaatgcttcc 600
tcttcttctt cttcttctca gaaatcaatt tctgttttgt tttgttcat ctgtagcttg 660
gtagattccc cttttttag accacacatc acggatccct agtctctatt gaatctgctg 720
agattacact ttgatggatg atgctctgtt tttgttttct tgttctgttt tttcctctgt 780
tgaaatcagc tttgttgctt gatttcattg aagtgtgtat tcaagaataa atcagttaca 840
attatggaat tcgtggtaac ttttactcat ctctccaat tatttctgat ttcatgcag 900
tttccctaca ttctattatg aatcgtgtta tgggtgtataa acgttgtttc atatctcatc 960
tcatctattc tgattttgat tctcttgctt actgaatttg accctactgt aatcgggtg 1020
aaatgtgaat gcttctctt cttcttctt tctcagaaa tcaatttctg tttgtttttt 1080
gttcatctgt agcttgatat cttcttttga tgctgatcca taattgtaac tgatttattc 1140
ttgaataaca acttcaatga aatcaagcaa caaagctgat ttcaacagag gaaaaaacag 1200
aacaagaaaa caaaaacaga gcatcatcca tcaaagtgtg atctcagcag attcaataga 1260
gactaagctt ttgattttta tgtttagcaa atgtcctatc agttttctct ttttgcgaa 1320
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cgggattgtt gatttatttc aaaactaaga gtttttgctt attgttctcg tctattttgg 1440
atatcaatct tagttttata tcttttctag ttctctacgt gttaaagtgt caacacacta 1500
gcaatttggc tgcagcgtat ggattatgga actatcaagt ctgtgggatc gataaatatg 1560
cttctcagga atttgagatt ttacagctct tatgtctcatt gggttgagta taatatagta 1620
aaaaaatagt ctaga 1635

```

<210> 34

<211> 240

<212> DNA

<213> *Solanum tuberosum*

<400> 34

```

gtccatgatg tcttcagggt ggtagcattg actgatggca tcatagtttt ttttttaaaa 60
gtatttcctc tatgcatatt attagtatcc aataaattta ctggttggtg tacatagaaa 120
aagtgcattt gcatgtatgt gtttctctga aattttcccc agtttttggt gctttgcctt 180
tggagccaag tctctatatg tataagaaaa ctaagaacaa tcacatatat caaatattag 240

```

<210> 35

<211> 228

<212> DNA

<213> *Solanum tuberosum*

<400> 35

```

acgaacttgt gatcgcttg aaagatttga acgtacata gagcttcttg acgtatctgg 60
caatattgca tcagtcttgg cggaatttca tgtgacaaca aggtttgcaa ttctttccac 120
tattagtagt gcaacgatat acgcagagat gaagtgtgta acaaacatat gtaaaatcga 180
tgaatttatg tcgaatgctg ggacgggctt cagcagggtt tgcttagt 228

```

<210> 36  
 <211> 2204  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Expression  
 cassette for an omega-mutated virD2 gene

<400> 36  
 ccgcgggtttt ctctccatcg cgtcagaggc cgggttttctg cggcatcgaa gagggccact 60  
 cgttttaccgt catttgccaa agcagcgcaa agggccatga gtgcgggtggt ttgcccagca 120  
 ccccttttga aagagcaaaa cgtcaaaaagt tgcataattct gatccgcct gtcctgtgaa 180  
 acggagtgca tttgtatttt tgttcgtata aatgtttttg tgattatcga tagtaaaag 240  
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 cgtcacgatg gagaattggg tggacgcaaa cgtgcaagag gtaatcgtcg ctcgagctcg 2160  
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<210> 37  
 <211> 1621  
 <212> DNA  
 <213> Solanum tuberosum

<400> 37  
 atggcttctg tgctggcttc tctgtttcca aaactgggct ctttgggtac ttcagatcat 60  
 gcttctgttg tatccatcaa cctctttgtg gactccttt gtgcttgcat catcattggt 120

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catctcttgg aggagaaccg ctgggttaat gaggccatta ctgccctcat aattggtttg 180
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attgaatttc tagatattgg ggattatctt gcaattggag caatatttgc tgccacagat 480
tccgtctgca cattgcaggc cctacatcag gatgagacac ccctccttta cagtcttgta 540
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aaagtgcac cgtactggcg caagtttgac gatgcattca tgcgcctcat gtttgggttg 1560
cggggatttg ctctcctgc ccctgggtct ccaacggaac aggtccatg aggtaccaat 1620
c

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&lt;210&gt; 38

&lt;211&gt; 1620

&lt;212&gt; DNA

&lt;213&gt; Solanum tuberosum

&lt;400&gt; 38

```

atggcttctg tgctggcttc tctgtttcca aaactgggct ctttgggtac ttcagatcat 60
gcttctgttg tatccatcaa cctctttgtg gcaactcctt gtgcttgcac catcattggg 120
catctcttgg aggagaaccg ctgggttaat gaggccatta ctgccctcat aattggtttg 180
tgtacaggag tggttatctt gctcgtaagt ggtggaaaga actcacacct tctggttttc 240
agtgaagatc tctttttcat atatgtactt cctccaatca tatttaatgc agggtttcag 300
gtaaaaaaga agcaattttt cgtgaacttc attactataa tgatgttcgg agccattggg 360
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attgaatttc tagatattgg ggattatctt gcaattggag caatatttgc tgccacagat 480
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actccaaagt ctctaacagc cccactccta ggcagtcgag aggactctga agttgattta 1440
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aaagtgcacg ggtactggcg caagtttgac gatgcattca tgcgccctat gtttggtggt 1560
cggggatttg ctctcctcgc ccctgggtct ccaacggaac aggggtccatg aggtacaatc 1620

```

&lt;210&gt; 39

&lt;211&gt; 747

&lt;212&gt; DNA

<213> *Solanum tuberosum*

&lt;400&gt; 39

```

atggaaaatt cggtagccag gactgtagaa gaagtattca acgatttcaa aggtcgtaga 60
gctggtttaa tcaaaagcact aactacagat gtcgagaagt tttatcaatc gtgtgatcct 120
gaaaaggaga acttgtgtct ctatgggctt cctaatagaaa catgggaagt aaacctccct 180
gtagaggagg tgcctccaga acttccggag ccagcattgg gcataaactt cgcacgtgat 240
ggaatgcaag agaaagactg gttatcactt gttgctgttc acagtgattc atggctgctt 300
tctgttgcac tttactttgg tgcaagggtt gggttcggca agagtgaag gaagaggctt 360
ttccaaatga taaatgatct cccaacagtg tttgaagttg ttaccggagc tgctaaacag 420
acacgtgatc cccctcacia caatagcaac aaaagcaaat caagtggaaa gcctcgacag 480
ccagagtccc aactcaaggc agtaaagggt tctccacctt aaatggagaa cgacagtggg 540
gaggagggaag aagaagaaga ggatgaacaa ggagcaactc tctgtggagc ttgtggtgat 600
aattatgccg ctgatgaatt ctggatttgc tgtgatattt gtgagagatg gttccatggc 660
aaatgtgtga agattacccc agcaaaagct gagcatatca agcagtacaa gtgtcctagt 720
tgcagtagca agagagctag agtttaa 747

```

&lt;210&gt; 40

&lt;211&gt; 741

&lt;212&gt; DNA

<213> *Solanum tuberosum*

&lt;400&gt; 40

```

tgacatctgc caataaagcc aagaataatt ggcattaaca tgaccaaaaa aatggtttgg 60
cagcattaag tcaataaaaa aagctacttt aatataaaat aatattaaaa tgcttaataa 120
ccaacagttt ataagaaggt taatgttaac atggatgagg aatgaccaa aggggaatta 180
tatattaacc tttaaatcaa tctaattctc tctttttgtt tctagctata tttactcgat 240
agataaactc tcttacttga cgaatttttt gatacaagaa gacatatttc atcatgattt 300
taattcgtcg tgtcaaattt attaaatagt ttaattttta tcgtaaattt agatatgaaa 360
tttaaaaaaa aataaatata tacatatttg aagaatacat aaaaagtaca tataaatcac 420
aatattttta taattcaaga tattaacaac catagaaaaa taattactta caaagaaatt 480
cttatttgaa tcctctaatt tcgagaagtg caacacaaac tgagacgaag aaaatgaata 540
atatttgata agaaatttat tataattgaa tgaccattta agtaattacg ggtaataaca 600
acacaataag gaactgtagt catttttaac acatggcaag gaatatgaga gtgtgatgag 660
tctataaata gaaggcttca ttagtgtaga ggagtcacaa acaagcaata cacaataaaa 720
attagtagct taaacaagat g 741

```

&lt;210&gt; 41

&lt;211&gt; 25

&lt;212&gt; DNA

<213> *Agrobacterium* sp.

&lt;400&gt; 41

tgacaggata tattggcggg taaac

25

<210> 42  
<211> 25  
<212> DNA  
<213> Agrobacterium sp.  
  
<400> 42  
tggcaggata tattgtggtg taaac

25

<210> 43  
<211> 25  
<212> DNA  
<213> Agrobacterium sp.  
  
<400> 43  
tggcaggata tataccggtg taatt

25

<210> 44  
<211> 25  
<212> DNA  
<213> Agrobacterium sp.  
  
<400> 44  
cggcaggata tattcaattg taatt

25

<210> 45  
<211> 25  
<212> DNA  
<213> Agrobacterium sp.  
  
<400> 45  
tggtaggata tataccggtg taatt

25

<210> 46  
<211> 25  
<212> DNA  
<213> Agrobacterium sp.  
  
<400> 46  
tggcaggata tatggtactg taatt

25

<210> 47  
<211> 25  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Consensus  
sequence

<220>  
<221> modified\_base

<222> (16)

<223> a, t, c or g

<400> 47

ygryaggata tatwsnvbkg taawy

25

<210> 48

<211> 25

<212> DNA

<213> Rhizobium leguminosarum

<400> 48

cggcaggata tatcctgatg taaat

25

<210> 49

<211> 25

<212> DNA

<213> Thermoanaerobacter tengcongensis

<400> 49

tggcaggagt tattcgaggg taaac

25

<210> 50

<211> 25

<212> DNA

<213> Arabidopsis thaliana

<400> 50

tgacaggata tatcgtgatg tcaac

25

<210> 51

<211> 25

<212> DNA

<213> Arabidopsis thaliana

<400> 51

gggaagtaca tattggcggg taaac

25

<210> 52

<211> 25

<212> DNA

<213> Oryza sativa

<400> 52

ttacaggata tattaatatg tatga

25

<210> 53

<211> 25

<212> DNA

<213> Homo sapiens

<400> 53  
taacatgata tattcccttg taaat

25

<210> 54  
<211> 25  
<212> DNA  
<213> Solanum tuberosum

<400> 54  
tgacaggata tatggtaatg taaac

25

<210> 55  
<211> 25  
<212> DNA  
<213> Solanum tuberosum

<400> 55  
tggcaggata tataccgatg taaac

25

<210> 56  
<211> 292  
<212> DNA  
<213> Saccharomyces cerevisiae

<400> 56  
ttcttcgcca gaggtttggt caagtctcca atcaagggtg tcggcttgtc taccttgcca 60  
gaaatttacg aaaagatgga aaagggtcaa atcggttgga gatacggtgt tgacacttct 120  
aaataagcga atttcttatg atttatgatt tttattatta aataagttat aaaaaaata 180  
agtgtataca aattttaag tgactcttag gttttaaaac gaaaattctt attcttgagt 240  
aactctttcc tgtaggtcag gttgctttct caggatatagc atgaggtcgc tc 292

<210> 57  
<211> 25  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Primer

<220>  
<221> modified\_base  
<222> (14)  
<223> a, t, c or g

<220>  
<221> modified\_base  
<222> (16)  
<223> a, t, c or g

<220>  
<221> modified\_base

<222> (18)

<223> a, t, c or g

<400> 57

tgrcaggata tatnvndntg taaac

25

<210> 58

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primer

<400> 58

ccgcgggtgat cacaggcagc aac

23

<210> 59

<211> 30

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primer

<400> 59

aagcttccag ccagccaaca gctccccgac

30

<210> 60

<211> 45

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primer

<400> 60

aagcttggct actagtgcga gatctctaag agaaaagagc gttta

45

<210> 61

<211> 41

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primer

<400> 61

gcattgctga gataggtgac cacatacaaa tggacgaacg g

41

<210> 62

<211> 34

<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Primer

<400> 62  
actagtgttt acccgccaat atatcctgtc agag 34

<210> 63  
<211> 35  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Primer

<400> 63  
aagctttggc aggatatatt gtggtgtaaa cgaag 35

<210> 64  
<211> 27  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Primer

<400> 64  
cggtgtaagt gaactgcagt tgccatg 27

<210> 65  
<211> 26  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Primer

<400> 65  
catcgcctc actcatgagc agattg 26

<210> 66  
<211> 24  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic  
oligonucleotide

<400> 66  
cacgctaagt gccggccgtc cgag 24

<210> 67  
<211> 24  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic  
oligonucleotide

<400> 67  
tcctaatacga cggcgacacg gctg

24

<210> 68  
<211> 29  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Primer

<400> 68  
aaagttgaat tcaaatgaga aatttattc

29

<210> 69  
<211> 28  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Primer

<400> 69  
ttttaagctt tcataataac atttcaat

28

<210> 70  
<211> 18  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Primer

<400> 70  
gaaccatgca tctcaatc

18

<210> 71  
<211> 30  
<212> DNA  
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primer

<400> 71

gtcaggatcc ctaccaagct acagatgaac

30

<210> 72

<211> 27

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primer

<400> 72

ggatccgagt gtgggtaagt aattaag

27

<210> 73

<211> 29

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primer

<400> 73

gaattctgtg ctctctatgc aaatctagc

29

<210> 74

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primer

<400> 74

ggaacattga agctgtgg

18

<210> 75

<211> 27

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primer

<400> 75

cgaattcatg gcaagcttgt gcaatag

27

<210> 76

<211> 30



<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Primer

<400> 76  
cgaattctta acaatctgca agactgatcg

30

<210> 77  
<211> 24  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Primer

<400> 77  
gagagatctt gataagacac aacc

24

<210> 78  
<211> 35  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Primer

<220>  
<221> misc\_feature  
<222> (7)  
<223> "a" to "c" mutation

<220>  
<221> misc\_feature  
<222> (14)  
<223> "a" to "c" mutation

<220>  
<221> misc\_feature  
<222> (17)  
<223> "a" to "c" mutation

<400> 78  
cattaccata agcccactgt atattagctt gttgc

35

<210> 79  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Primer

<400> 79  
gtgcttatag aattggtggc

20

<210> 80  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Primer

<400> 80  
tagttcccg gagttcagtg

20

<210> 81  
<211> 50  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Primer

<220>  
<221> misc\_feature  
<222> (17)  
<223> "a" to "g" mutation

<220>  
<221> misc\_feature  
<222> (29)  
<223> "a" to "t" mutation

<400> 81  
ctcccgggaa ctataggaaa cattcctctc ggctctgtcc acatctggtc

50

<210> 82  
<211> 21  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Primer

<400> 82  
gtgtgatatc tggtcttttc c

21

<210> 83  
<211> 22  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Primer

<400> 83  
gaatgagctt gacaaggcgg ag 22

<210> 84  
<211> 21  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Primer

<400> 84  
ctggcgataa cggaactgtt g 21

<210> 85  
<211> 24  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Primer

<400> 85  
gtccatgatg tcttcagggt ggta 24

<210> 86  
<211> 24  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Primer

<400> 86  
ctaataatttg atatattga ttgt 24

<210> 87  
<211> 24  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Primer

<400> 87  
acgaacttgt gatcgcggtg aaag 24

<210> 88  
<211> 24  
<212> DNA  
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primer

<400> 88

actaagcaaa acctgctgaa gccc

24

<210> 89

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primer

<400> 89

cccgggatgg cttctgtgct ggct

24

<210> 90

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primer

<400> 90

ggtacctcat ggaccctgtt ccgt

24

<210> 91

<211> 32

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primer

<400> 91

cccgggtatg gaaaattcgg taccaggac tg

32

<210> 92

<211> 25

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primer

<400> 92

actagttaaa ctctagctct cttgc

25

<210> 93  
 <211> 17  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Primer

<220>  
 <221> modified\_base  
 <222> (2)  
 <223> a, t, c or g

<220>  
 <221> modified\_base  
 <222> (6)  
 <223> a, t, c or g

<220>  
 <221> modified\_base  
 <222> (10)..(15)  
 <223> a, t, c or g

<400> 93  
 angatntatn nnnnngt 17

<210> 94  
 <211> 25  
 <212> DNA  
 <213> Triticum sp.

<400> 94  
 tggcaggata tatgagtgtg taaac 25

<210> 95  
 <211> 26  
 <212> DNA  
 <213> Triticum sp.

<400> 95  
 ttggcaggat atatccctct gtaaac 26

<210> 96  
 <211> 244  
 <212> DNA  
 <213> Solanum tuberosum

<400> 96  
 gtccatgatg tcttcagggt ggtagcattg actgattgca tcatagtttt tttttttttt 60  
 ttaagtattt cctctatgca tattattagt atccaataaa tttactgggt gttgtacata 120  
 gaaaaagtgc atttgcatgt atgtgtttct ctgaaatttt ccccagtttt tgggtgctttg 180  
 cctttggagc caagtctcta tatgtaataa gaaaactaag aacaatcaca tatatcaaat 240  
 atta 244

<210> 97  
 <211> 239  
 <212> DNA  
 <213> Solanum tuberosum

<400> 97  
 acgaacttgt gatcgcggtt aaagatttga acgctacttg gtcattccaca tagagcttct 60  
 tgacgtatct ggcaatattg catcagtcctt ggcggaattt catgtgacaa aaggtttgca 120  
 attctttcca ctattagtag tgcaacgata tacgcagaga tgaagtgctg aacaaacata 180  
 tgtaaaatcg atgaatttat gtcgaatgct gggacgggct tcagcaggtt ttgcttagt 239

<210> 98  
 <211> 416  
 <212> DNA  
 <213> Solanum tuberosum

<400> 98  
 gtttacatta ccatatatcc tgctcagaggt atagaggcat gactggcatg atcactaaat 60  
 tgatgccac agaggagact tataacctac aggggcacgt agttctagga cttgaaagtg 120  
 actgaccgta gtccaactcg gtataaagcc tactcccaac taaatatatg aaatttatag 180  
 cataactgca gatgagctcg attctagagt aggtaccgag ctggaattcc ttactcctcc 240  
 acaaagccgt aactgaagcg acttctattt ttctcaacct tcggacctga cgatcaagaa 300  
 tctcaatagg tagttcttca taagtgaagc tatccttcac agctacactt tctaaaggta 360  
 cgatagattt tggatcaacc acacacactt cgtttacatc ggtatatatc ctgcca 416

<210> 99  
 <211> 181  
 <212> PRT  
 <213> Solanum tuberosum

<400> 99  
 Met Arg Asn Leu Phe Pro Ile Leu Met Leu Ile Thr Asn Leu Ala Leu  
 1 5 10 15  
 Asn Asn Asp Asn Asn Asn Asn Asn Asn Asn Asn Asn Tyr Asn Leu  
 20 25 30  
 Ile His Ala Thr Cys Arg Glu Thr Pro Tyr Tyr Ser Leu Cys Leu Thr  
 35 40 45  
 Thr Leu Gln Ser Gly Pro Arg Ser Asn Glu Val Glu Gly Gly Asp Ala  
 50 55 60  
 Ile Thr Thr Leu Gly Leu Ile Met Val Asp Ala Val Lys Ser Lys Ser  
 65 70 75 80  
 Ile Glu Ile Met Glu Lys Ile Lys Glu Leu Glu Lys Ser Asn Pro Glu  
 85 90 95  
 Trp Arg Ala Pro Leu Ser Gln Cys Tyr Val Ala Tyr Asn Ala Val Leu  
 100 105 110  
 Arg Ala Asp Val Thr Val Ala Val Glu Ala Leu Lys Lys Gly Ala Pro  
 115 120 125

Lys Phe Ala Glu Asp Gly Met Asp Asp Val Val Ala Glu Ala Gln Thr  
 130 135 140

Cys Glu Tyr Ser Phe Asn Tyr Tyr Asn Lys Leu Asp Phe Pro Ile Ser  
 145 150 155 160

Asn Leu Ser Arg Glu Ile Ile Glu Leu Ser Lys Val Ala Lys Ser Ile  
 165 170 175

Ile Arg Met Leu Leu  
 180

<210> 100

<211> 172

<212> PRT

<213> Nicotiana tabacum

<400> 100

Met Arg Asn Leu Phe Pro Ile Phe Met Leu Ile Thr Asn Leu Ala Phe  
 1 5 10 15

Asn Asp Asn Asn Asn Ser Asn Asn Ile Ile Asn Thr Thr Cys Arg Ala  
 20 25 30

Thr Thr Asn Tyr Pro Leu Cys Leu Thr Thr Leu His Ser Asp Pro Arg  
 35 40 45

Thr Ser Glu Ala Glu Gly Ala Asp Leu Thr Thr Leu Gly Leu Val Met  
 50 55 60

Val Asp Ala Val Lys Leu Lys Ser Ile Glu Ile Met Lys Ser Ile Lys  
 65 70 75 80

Lys Leu Glu Lys Ser Asn Pro Glu Leu Arg Leu Pro Leu Ser Gln Cys  
 85 90 95

Tyr Ile Val Tyr Tyr Ala Val Leu His Ala Asp Val Thr Val Ala Val  
 100 105 110

Glu Ala Leu Lys Arg Gly Val Pro Lys Phe Ala Glu Asn Gly Met Val  
 115 120 125

Asp Val Ala Val Glu Ala Glu Thr Cys Glu Phe Ser Phe Lys Tyr Asn  
 130 135 140

Gly Leu Val Ser Pro Val Ser Asp Met Asn Lys Glu Ile Ile Glu Leu  
 145 150 155 160

Ser Ser Val Ala Lys Ser Ile Ile Arg Met Leu Leu  
 165 170

<210> 101

<211> 166

&lt;212&gt; PRT

<213> *Nicotiana tabacum*

&lt;400&gt; 101

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Met Lys Asn Leu Ile Phe Leu Thr Met Phe Leu Thr Ile Leu Leu Gln
 1             5             10             15

Thr Asn Ala Asn Asn Leu Val Glu Thr Thr Cys Lys Asn Thr Pro Asn
          20             25             30

Tyr Gln Leu Cys Leu Lys Thr Leu Leu Ser Asp Lys Arg Ser Ala Thr
          35             40             45

Gly Asp Ile Thr Thr Leu Ala Leu Ile Met Val Asp Ala Ile Lys Ala
          50             55             60

Lys Ala Asn Gln Ala Ala Val Thr Ile Ser Lys Leu Arg His Ser Asn
          65             70             75             80

Pro Pro Ala Ala Trp Lys Gly Pro Leu Lys Asn Cys Ala Phe Ser Tyr
          85             90             95

Lys Val Ile Leu Thr Ala Ser Leu Pro Glu Ala Ile Glu Ala Leu Thr
          100            105            110

Lys Gly Asp Pro Lys Phe Ala Glu Asp Gly Met Val Gly Ser Ser Gly
          115            120            125

Asp Ala Gln Glu Cys Glu Glu Tyr Phe Lys Gly Ser Lys Ser Pro Phe
          130            135            140

Ser Ala Leu Asn Ile Ala Val His Glu Leu Ser Asp Val Gly Arg Ala
          145            150            155            160

Ile Val Arg Asn Leu Leu
          165

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&lt;210&gt; 102

&lt;211&gt; 277

&lt;212&gt; DNA

<213> *Solanum tuberosum*

&lt;400&gt; 102

```

ctggcgataa cggaactggt ggaggatatt ggtttgaag atgaagatac tattgcggtg 60
actctggtgc caaagagagg tggatgaagg atctccattg aaagtgcgac gatcagtcct 120
gcagattggt aattagtcct tattgaatct gctgagatta cactttgatg gatgatgctc 180
tggttttggg ttcttggtct gttttttcct ctgttgaaat cagctttggt gcttgatttc 240
attgaagttg ttattcaaga ataatcagt tacaatt 277

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&lt;210&gt; 103

&lt;211&gt; 300

&lt;212&gt; DNA

<213> *Solanum tuberosum*



<400> 103

ctggcgataa cggaactggt ggaggatatt ggattggaag atgaagatac tattgcggtta 60  
acttttggttc caaaagtagg tgggtgaaggt gtatccattg aaagtgtgga gatcaagctt 120  
gaggattggt aagtcctcat gagttggtgg ctacggtacc aaattttatg ttttaattagt 180  
attaatgtgt gtatgtgttt gattatgttt cggttaaaat gtatcagctg gatagctgat 240  
tactagcctt gccagttggt aatgctatgt atgaaataaa taaataaatg gttgtcttct 300

<210> 104

<211> 296

<212> DNA

<213> Solanum tuberosum

<220>

<221> modified\_base

<222> (54)

<223> a, t, c or g

<220>

<221> modified\_base

<222> (166)

<223> a, t, c or g

<220>

<221> modified\_base

<222> (223)

<223> a, t, c or g

<400> 104

ctggcgataa cggaactggt ggaggataat ggattggaag atgaaggtag tatngcggtta 60  
acttttggttc caaaagtgg tgggtgaaggt gtatccattg aaagtgcgga gatcaagctt 120  
gaggattggt aagtcctcat gagttggtgg ctatggtacc aaattntatg ttttaattagt 180  
attaatgtgt gtgtttgatt atgtttcggg taaaatgtat canctggata gctgattact 240  
agccttccca gttgttaatg ctatgtatga aatacataaa taaatgggtg tcttcc 296

<210> 105

<211> 13

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primer

<400> 105

ygrcaggata tat

13

<210> 106

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primer

<220>

<221> modified\_base

<222> (11)..(15)

<223> a, t, c or g

<400> 106

caggatatat nnnnnkgtaa ac

22

<210> 107

<211> 25

<212> DNA

<213> Arabidopsis thaliana

<400> 107

tggtaggata cattctgatg tagat

25

<210> 108

<211> 25

<212> DNA

<213> Arabidopsis thaliana

<400> 108

tgacaggata tatcgtgatg tcaac

25

<210> 109

<211> 25

<212> DNA

<213> Arabidopsis thaliana

<400> 109

tggtaggata cattctgatg tagta

25

<210> 110

<211> 25

<212> DNA

<213> Oryza sp.

<400> 110

tggcaggata tcttggcatt taaac

25

<210> 111

<211> 25

<212> DNA

<213> Oryza sp.

<400> 111

tgtcaggata tatatcgata tgaac

25

<210> 112

<211> 25

<212> DNA  
<213> Oryza sp.

<400> 112  
tgtcaggata tatatcgata tgaac

.25

<210> 113  
<211> 25  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Primer

<220>  
<221> modified\_base  
<222> (14)..(18)  
<223> a, t, c or g

<400> 113  
ygrcaggata tatnnnnnkg taaac

25

<210> 114  
<211> 18  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Primer

<400> 114  
gaccacaccc gtcctgtg

18

<210> 115  
<211> 13  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Primer

<400> 115  
ygrcaggata tat

13

<210> 116  
<211> 12  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Primer

<400> 116  
atggcgacca ca 12

<210> 117  
<211> 22  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Primer

<220>  
<221> modified\_base  
<222> (11)..(15)  
<223> a, t, c or g

<400> 117  
caggatatat nnnnnkgtaa ac 22

<210> 118  
<211> 22  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Primer

<400> 118  
gtccaacttg cacaggaaag ac 22

<210> 119  
<211> 22  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Primer

<400> 119  
catggatgaa atactcctga gc 22

<210> 120  
<211> 24  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Primer

<400> 120  
gttcagacaa gaccacagat gtga 24

<210> 121  
<211> 74  
<212> PRT  
<213> Solanum tuberosum

<400> 121  
Met Ser Ser Thr Ser Asn Val Gly Gln Asp Cys Leu Ala Glu Val Thr  
1 5 10 15  
Ile Ser Tyr Gln Trp Val Gly Arg Val Ile Asn Tyr Asn Phe Phe Leu  
20 25 30  
Leu Ile His Trp Tyr Thr Val Val Glu Ala Ser Thr Gly Ile Thr Phe  
35 40 45  
Gln Ile Phe Pro Ile Gly Ile Arg Ser Glu Asp Asp Arg Ser Phe Tyr  
50 55 60  
Glu Lys Ala Asp Arg Phe Ala Trp Val Thr  
65 70

<210> 122  
<211> 51  
<212> PRT  
<213> Solanum tuberosum

<400> 122  
Met Ser Ser Glu Ser Thr Phe Ser Lys Thr Pro Asn Gly Arg Ala Thr  
1 5 10 15  
Asp Val Gly Ile Pro Thr Glu Glu Gly Thr Phe Pro Phe Arg Tyr Ala  
20 25 30  
Ile Leu Arg Asp Leu Ala Pro Thr Ile Ser Leu Val Asn Ser Ser Ala  
35 40 45  
Asp Ile Ala  
50

<210> 123  
<211> 76  
<212> PRT  
<213> Solanum tuberosum

<400> 123  
Met Ser Glu Gly Val Gly Phe Lys Ser Lys Ile Leu Pro Ser Phe Ala  
1 5 10 15  
Trp Arg Ser Ala Asn Ile Leu Gly Ser Lys His Val Ala Lys Gln Thr  
20 25 30  
Phe Pro Phe Leu Ala Arg Thr Glu Thr Cys Glu Arg Thr Ser Gly Met  
35 40 45

Ser Gly Val Ile Arg Ala Thr Ala Pro Ser Gly Ile Ser Ser Ser Pro  
 50 55 60

Leu Thr Asp Phe Ala Thr Lys Ile Val Gly Phe Ser  
 65 70 75

<210> 124  
 <211> 62  
 <212> PRT  
 <213> Solanum tuberosum

<400> 124  
 Val Cys Ser Pro Ala Leu Lys Ala Asp Lys Ser Lys Ser Ala Asp Gly  
 1 5 10 15

Thr Cys Val Asp His Ser Arg Arg Leu Ile Val Val Leu Val Leu Tyr  
 20 25 30

Pro Gly Met Gly Thr Ser Tyr Ala Thr Ala Phe Ile Ser Ser Pro Pro  
 35 40 45

Ile Gln Tyr Leu Phe Pro Ser Asp Pro Val Glu Thr Phe Pro  
 50 55 60

<210> 125  
 <211> 50  
 <212> PRT  
 <213> Solanum tuberosum

<400> 125  
 Met Leu Gly Ser Leu Val Leu Pro Lys Ser Pro Glu Asn Arg Lys Gln  
 1 5 10 15

Ala Val Pro Asn Pro His Phe Gln Glu Gln His Leu Val Pro Glu Lys  
 20 25 30

Pro His Phe Leu Asp Cys Gly Gln Gly Phe Ser Lys Leu Pro Gln Met  
 35 40 45

His Gln  
 50

<210> 126  
 <211> 65  
 <212> PRT  
 <213> Solanum tuberosum

<400> 126  
 Met Val Asn Phe Leu Thr Gln Gly Ile Val Asp Met Glu Thr Ala Phe  
 1 5 10 15

Gly Ser Pro Lys Met Gly Gly Phe Gly Lys Glu Gln Phe Gly Ala Cys  
 20 25 30

Val Ser Arg Ser Glu Met Asp Glu Ser Gly Ile Gly Ala Val Met Val  
 35 40 45

Glu Gln Val Cys Ser Ile Cys Ser Arg His Phe Val Leu Ser Met Gln  
 50 55 60

Ile  
 65

<210> 127

<211> 77

<212> PRT

<213> Solanum tuberosum

<400> 127

Met Leu Glu Gly Ser Met Trp Pro Trp Asn Gln Glu Ser Met Lys Arg  
 1 5 10 15

Ala Phe Leu Asn His His Phe Leu Met Leu His Leu Phe Pro Ala Gln  
 20 25 30

Arg Pro Pro Gln Ala Ala Asp Pro Val Cys Leu Lys His Gln His Met  
 35 40 45

His Cys Gly Cys Leu Ser Phe Gln Leu His Leu Ser Lys Leu Ala Pro  
 50 55 60

Gly Asp Thr Pro Leu Ile Ser Ser Met Phe Ala Leu Asp  
 65 70 75

<210> 128

<211> 49

<212> PRT

<213> Solanum tuberosum

<400> 128

Met Lys Leu Cys Ser Ser Ile Ile Leu Ser Ile Ile Lys Gln Lys Gln  
 1 5 10 15

Val Glu Ile Leu Arg Ala Cys Phe Gly Phe Pro Glu Thr Lys Thr Ile  
 20 25 30

Ser Val Phe Ser Ser Val Ser Trp Asn Trp His Ile Ile Cys Lys Ser  
 35 40 45

Leu

<210> 129

<211> 64

<212> PRT

<213> Solanum tuberosum

&lt;400&gt; 129

Met Thr Lys Lys Pro Asp Arg Lys Asp Asn Ile Met Pro Tyr Asn Phe  
 1 5 10 15  
 Pro Gly Thr Lys Phe Leu Gln Pro Ile Phe Arg Asn Phe Phe Leu Pro  
 20 25 30  
 Ser Leu Cys Asp Lys Leu Leu Lys Lys Ser Ile Ser Val Pro Gln Ala  
 35 40 45  
 Ile Thr Pro Cys Trp Lys Val Gln Cys Gly His Gly Ile Lys Lys Ala  
 50 55 60

&lt;210&gt; 130

&lt;211&gt; 115

&lt;212&gt; PRT

&lt;213&gt; Solanum tuberosum

&lt;400&gt; 130

Thr Ile Leu Lys Leu Asp Leu His Thr Phe Asn Gly His Phe Phe Thr  
 1 5 10 15  
 Ala Ser Phe Trp Asn Gln Ser His Arg Asn Ser Ile Phe Ile Phe Gln  
 20 25 30  
 Ser Asn Ile Leu Gln Gln Phe Ser Tyr Arg Gln Leu Glu Ser Asn Thr  
 35 40 45  
 Gly Asn Met Ile Ser Ile Thr Ser Met Asn Met Arg Gln Ala Ser Ile  
 50 55 60  
 Thr Pro Cys Lys Leu Arg Leu Ile Lys Leu Ile Cys Ile His Ser Leu  
 65 70 75 80  
 Val His Val Gln Lys His Ile Glu Pro Tyr Ile Val Pro Ile Ile Ile  
 85 90 95  
 Arg Tyr Phe Ile Glu Cys Gln Tyr Leu Leu Leu Leu Ile Phe Leu Leu  
 100 105 110  
 Cys Cys Pro  
 115

&lt;210&gt; 131

&lt;211&gt; 122

&lt;212&gt; PRT

&lt;213&gt; Solanum tuberosum

&lt;400&gt; 131

Met Lys Gly Lys Glu Lys Pro Arg Glu Met Asn Leu Gln Phe Phe Thr  
 1 5 10 15  
 Thr Asn Phe Val Ser Thr Val Ala Ile Ser Thr Met Asn Ile Ser Leu  
 20 25 30



Leu Phe Lys Ala Lys Arg Val Lys Gly Val Phe Ile Lys Phe Pro His  
           35                                  40                                  45  
 Ser Thr Arg Ser Gln Leu Ile Leu Gly Tyr Val Leu Leu Ile Arg Arg  
           50                                  55                                  60  
 Met Ser Arg Gly Ala Asp Ala Glu Phe Ser His Arg Arg Glu Leu Val  
           65                                  70                                  75                                  80  
 Val Arg Asn Thr Ile Asp Leu Ile Gly Tyr Arg Arg Ala Thr Thr Val  
                                   85                                  90                                  95  
 Tyr Tyr Ile Asn Thr Phe Phe Tyr Met Gly Ser Thr Thr Arg Leu Glu  
                   100                                  105                                  110  
 Ile Arg Arg Trp Tyr Arg Cys Ser Ser Arg  
           115                                  120

<210> 132  
 <211> 104  
 <212> PRT  
 <213> Solanum tuberosum

<400> 132  
 Met Glu Trp Ala Leu Ala Arg Asn Arg Ile Pro Phe Phe Tyr Cys Pro  
   1                                  5                                  10                                  15  
 Asn Ser Leu Arg Thr Ser His Gly Lys Gly Tyr Asp Phe His Arg Arg  
           20                                  25                                  30  
 Lys Arg Ile Gln Ser Ser Thr Asn Leu Tyr Leu Leu Asn Pro Phe Phe  
           35                                  40                                  45  
 Ser Arg Gln Leu Ile Ser Ile His Ser Thr Ser Cys Pro His Trp His  
           50                                  55                                  60  
 Gly Gly Ser Lys Lys Ser Asp Leu Asn Arg Val Ser Arg Asn Tyr Pro  
           65                                  70                                  75                                  80  
 Cys Leu His Arg Phe Phe Asp Glu Val Cys His Arg Ser Arg Cys Glu  
                   85                                  90                                  95  
 Pro Glu Tyr Glu Gly Cys Phe Gln  
           100

<210> 133  
 <211> 92  
 <212> PRT  
 <213> Solanum tuberosum

<400> 133  
 Met Asn Asn Ile Thr His Ser Pro Ile Leu Ile Pro Phe Leu Glu Gln  
   1                                  5                                  10                                  15

Leu Asn Pro Phe Ile Ser Asn Cys His Met Gln Pro Ile Val Lys Ala  
20 25 30  
Asn Thr Pro Ile Leu Asn Gly Asn Thr Lys Cys Arg His Ser Ala Asn  
35 40 45  
Ile Phe Thr Asn Gly Asn Cys Ile Trp Glu Lys Pro Met Asn Lys Ile  
50 55 60  
Val Asp Gln His Gln Ile His Asn Ser Ile His Ile Ser Cys Glu Ser  
65 70 75 80  
Lys Val Phe Leu Val Val Pro Ser Glu Ser His Arg  
85 90

<210> 134  
<211> 57  
<212> PRT  
<213> Solanum tuberosum

<400> 134  
Met Lys Phe Arg Tyr Pro Ser Pro Pro Asn Pro Ile Val Thr Ser Leu  
1 5 10 15  
Ile Ile Leu Cys Asn Ala Ile Pro Arg Ser Ile Asn Asp Val Asp Gly  
20 25 30  
Leu Ser Arg Ala Ile Lys Ser Tyr Ile Ser Leu Ser Ile Ser Gln Asn  
35 40 45  
Ala Ile Val Leu Ser Pro Thr Arg Ala  
50 55

<210> 135  
<211> 70  
<212> PRT  
<213> Solanum tuberosum

<400> 135  
Met Val Asn Ile Met Thr Ser Ser Ser Met Ala Thr Lys Phe Pro Ser  
1 5 10 15  
Ile Thr Val Gln Cys Asn Ser Val Leu Pro Trp Gln Val Thr Ser Asn  
20 25 30  
Phe Ile Pro Phe Val Cys Val Leu Trp Val Glu Val Glu Tyr Lys Tyr  
35 40 45  
Gln Val Thr Thr Phe Lys His Asn Asn Leu Ile Ile Ile Ile His Ala  
50 55 60  
Ala Tyr Tyr Leu Phe Ser  
65 70

<210> 136  
<211> 51  
<212> PRT  
<213> Solanum tuberosum

<400> 136  
Met Ala Lys Leu Val Thr His Glu Ile Glu Val Pro Leu Ser Ser Gln  
1 5 10 15  
Gly His Cys Glu Lys Met Asp His Leu Val Lys Arg Asn Ser Ser Ile  
20 25 30  
Asn Asn Arg Arg Ser Ile Cys Gln Ala Arg His Ala Arg Ile His Leu  
35 40 45  
Phe Val His  
50

<210> 137  
<211> 72  
<212> PRT  
<213> Solanum tuberosum

<400> 137  
Met Phe Glu Thr Lys Leu Asn Ser Gly Val Val Trp Asn Asp Trp Leu  
1 5 10 15  
Thr Val Asn Ile Arg Asn Ser Asn Thr Pro Asn Thr Lys Leu Val Leu  
20 25 30  
Leu His His Val Val Arg Thr Val Pro Ser Ile Glu Ile Ala Asn Asn  
35 40 45  
Phe Val Phe Leu Ser Ser Arg Ser Pro Phe Thr Ile Asp Tyr Ala Thr  
50 55 60  
Ile Phe Pro Val Glu Ser Lys Phe  
65 70

<210> 138  
<211> 66  
<212> PRT  
<213> Solanum tuberosum

<400> 138  
Met Leu Tyr Thr Ser Leu Tyr Ile Ser Tyr Leu Ser Asn Ser Met Leu  
1 5 10 15  
Leu Pro Ser Trp Thr Asn Leu His His Ser Tyr Ser Leu Asn Asn Leu  
20 25 30  
Ser Thr Tyr Leu Gly Leu Pro Leu Pro Gly Gly Asn Gln Asn Gln Phe  
35 40 45

Leu Pro Gln Lys Gln Ala Gly Gln Gly Pro Ala Tyr Gln Lys His Leu  
50 55 60

Arg Gln  
65

<210> 139

<211> 25

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primer

<220>

<221> modified\_base

<222> (8)

<223> a, t, c or g

<220>

<221> modified\_base

<222> (10)

<223> a, t, c or g

<220>

<221> modified\_base

<222> (12)

<223> a, t, c or g

<400> 139

gtttacanhn bnatatatcc tgyca

25